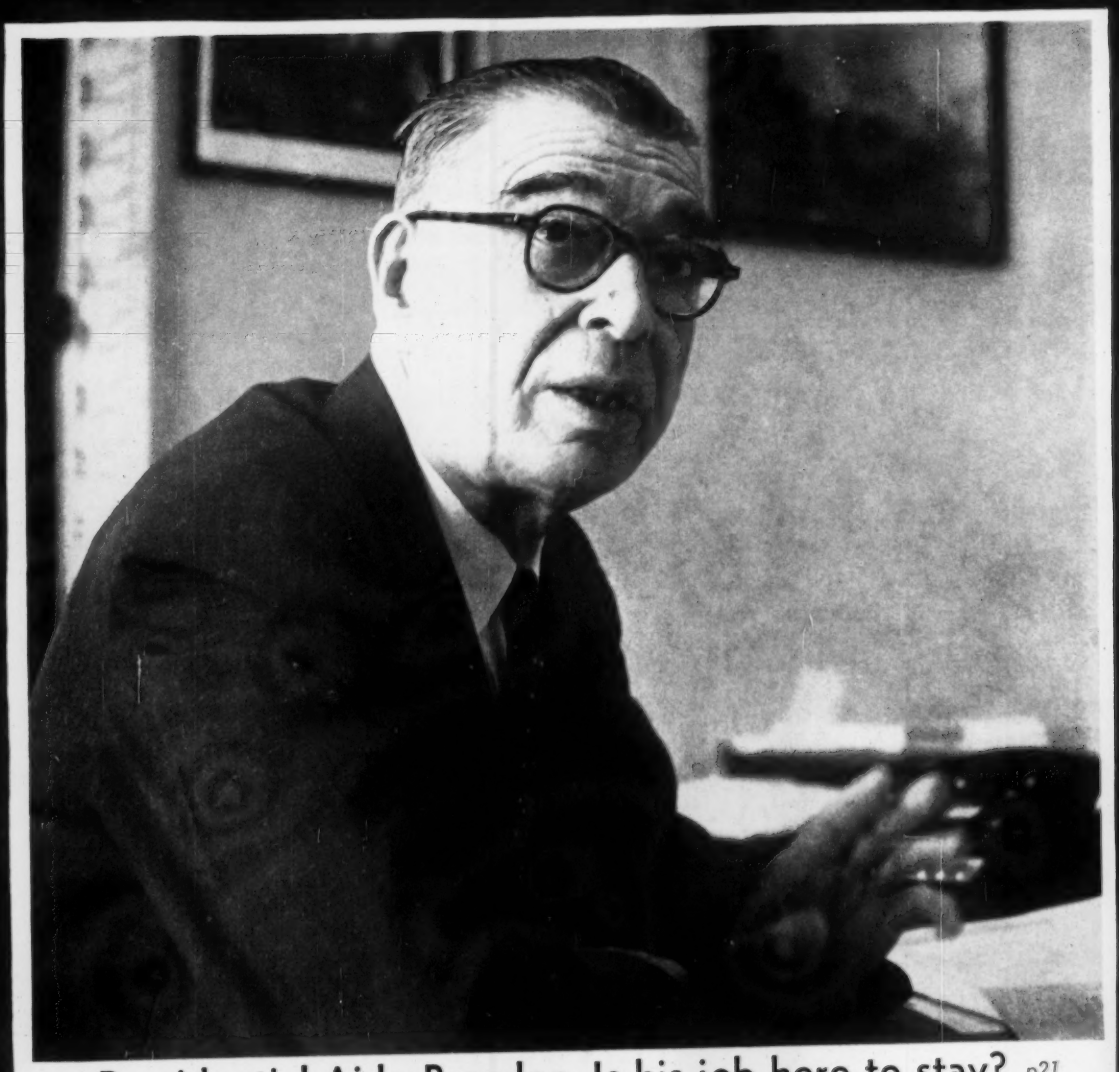
ENGINEERING NEWS-RECORD

- [redacted]
- How Italy is tripling its expressways



Presidential Aide Bragdon: Is his job here to stay? p21

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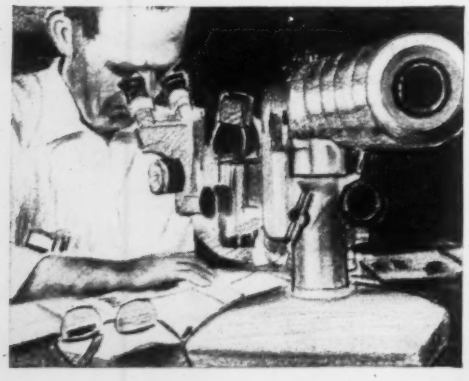
A Byers field service representative can relate new 4-D Wrought Iron test results to the specifier's corrosive applications.

Laboratory and field test results lend added support to 4-D Wrought Iron specs

Our metallurgical staff compiles and analyzes great funds of data on corrosion-resistant materials.



With some products, a company representative's natural enthusiasm is often *tempered* by actual test results in the laboratory.

Not so however, with new 4-D Wrought Iron. Byers field service engineers can present research facts which confirm the increased corrosion-resistance of this new product.

Comparative testing with standard Wrought Iron, as well as many ferrous substitutes, proves new 4-D Wrought Iron a decidedly superior deterrent to corrosion. So the wisdom of standard Wrought Iron specifications may now be further enhanced by specifying new 4-D Wrought Iron.

Byers field service engineers are lending even more credibility to this story with their own knowledge of corrosive infighting. The Byers representative will welcome an opportunity to relate these test results to your corrosive applications. Call him soon. Or, write us for helpful literature on new 4-D Wrought Iron. A. M. Byers Company, Clark Building, Pittsburgh 22, Pa.

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G.T.M.-Specified
Contractor's Air-Water Hose
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CONTRACTOR'S AIR-WATER
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How to keep things flowing on any construction job

Keeping things flowing is no little trick—if you don't have completely dependable hose for every need.

Reason enough, then, that you should look into the Goodyear built-for-the-job line. Contractor's Air-Water Hose, for example, will suit many of your everyday requirements—handling air or water interchangeably—up to 200 psi.

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60th GOODYEAR ANNIVERSARY

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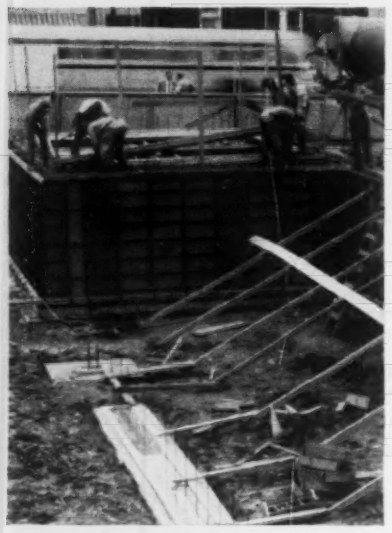
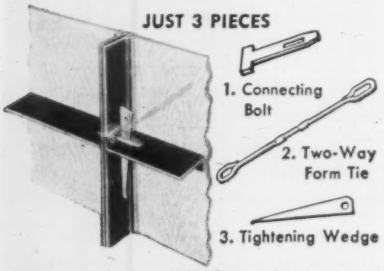


Symons Forms Help Contractor Speed Work on Bank Job

Used to Pour Foundation, Vaults & Retaining Walls

Designer and builder, Western Bank Contractors, Inc., Kansas City, Mo., used concrete to provide new look for banking in Kansas City. 4,000 square feet of Symons Steel-Ply Forms were used to speed construction of the foundation, vaults & retaining walls on this new $250,000 Community State Bank of Kansas City, Mo.

Initial cost of Symons Steel-Ply Forms is higher than Wood-Ply Forms, but this is more than offset by the



many reuses possible. Low-cost-per-use plus easier handling and stacking are reasons for the increasing demand.

Symons Steel-Ply Forms can be rented with purchase option. Steel-Ply Form Catalog FREE upon request.

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ENGINEERING NEWS-RECORD, Vol. 161, No. 8 August 21, 1958

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. Publication Office, 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or change in address. **Executive, Editorial, Advertising and Circulation Offices, McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice President; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice President, Publications Division; Ralph B. Smith, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. **Subscriptions are solicited only from persons with identifiable commercial or professional interests in construction and building. Position and company connection must be indicated on subscription orders.** United States subscription rate for individuals in the field of this publication $6.00 per year, single copies 50 cents; foreign $20.00 per year, payable in advance. Second-Class mail privileges authorized at Albany, New York. Printed in U. S. A. Title registered in U.S. Patent Office.

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Things that make Northwest users into Northwest Boosters!

Another NORTHWEST 80-D makes 16 Northwests in the growth of Connolly-Pacific Co. Long Beach, Calif.

● Another Northwest 80-D has taken its place in the all Northwest job in the quarries of Connolly-Pacific Co. in the paradise of Catalina Island.

This new Northwest has replaced an old 80-D that began work with the company in 1942. In the past eleven years the old rig had handled over 5,000,000 tons of volcanic rock and Basalt for the breakwaters of southern California.

There are three 80-D's in the Santa Catalina Quarries and they have to be nimble rigs. The face is 200 to 250 ft. high and is almost solid rock. Rock is fractured by dynamite and then the shovels by loosening key boulders start landslides and shovel and trucks must move quickly to escape the cascading rock and overburden.

Northwests are built for jobs like this—Northwests load fast and move fast! Plenty of power combines with the Northwest Dual Independent Crowd that utilizes force most independent crowd shovels waste to cut through a bank or handle heavy digging without "stuttering". Uniform Pressure Swing Clutches take the jerks and grabs out of swinging and make spotting accurate without losing time jockeying a load over the truck. The Cushion Clutch eliminates shock overloads before they reach machinery and the "Feather-Touch" Clutch Control gives the feel of the load and makes operation easy without resorting to pumps, compressors, and other delicate mechanism.

This is only part of the story. We would like to have you know the complete details on the size machine you need. Why not ask for a catalog?

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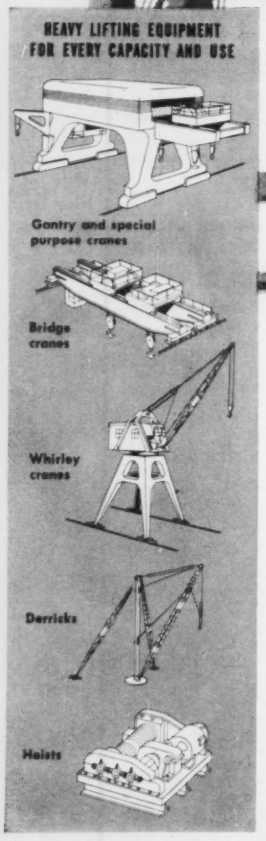
¾ Yd. to 2½ Yd. Capacity	15-Ton to 50-Ton Capacity	¾ Yd. to 3 Yd. Capacity	¾ Yd. to 2½ Yd. Capacity	25-Ton and 35-Ton Capacity

BIG CRANES BY YUBA



PRODUCTS OF YUBA MANUFACTURING DIVISION AND ADSCO DIVISION

When specialized lifting equipment is needed, industry and prime contractors have found they may profitably turn these problems over to Yuba – from custom design through machining, fabrication, testing and erection – a complete service with a single responsibility. Whenever you need custom lifting equipment – any size, any kind, anywhere – it will pay you to talk with Yuba Engineers. Write or call *Yuba Manufacturing Division, 701 East H Street, Benicia, California, or Adsco Division, 20 Milburn Street, Buffalo 12, New York,* for free copies of Bulletins MA-61 and HY-51 on Yuba facilities, cranes and allied equipment.

YUBA CONSOLIDATED INDUSTRIES, INC.

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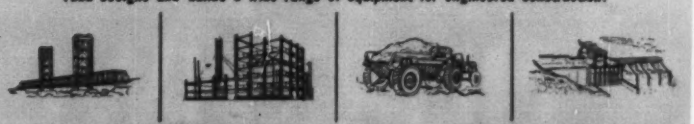
YUBA

Yuba designs and builds a wide range of equipment for engineered construction:



Amvit VITRIFIED CLAY LINER PLATES

protect concrete structures from disintegration

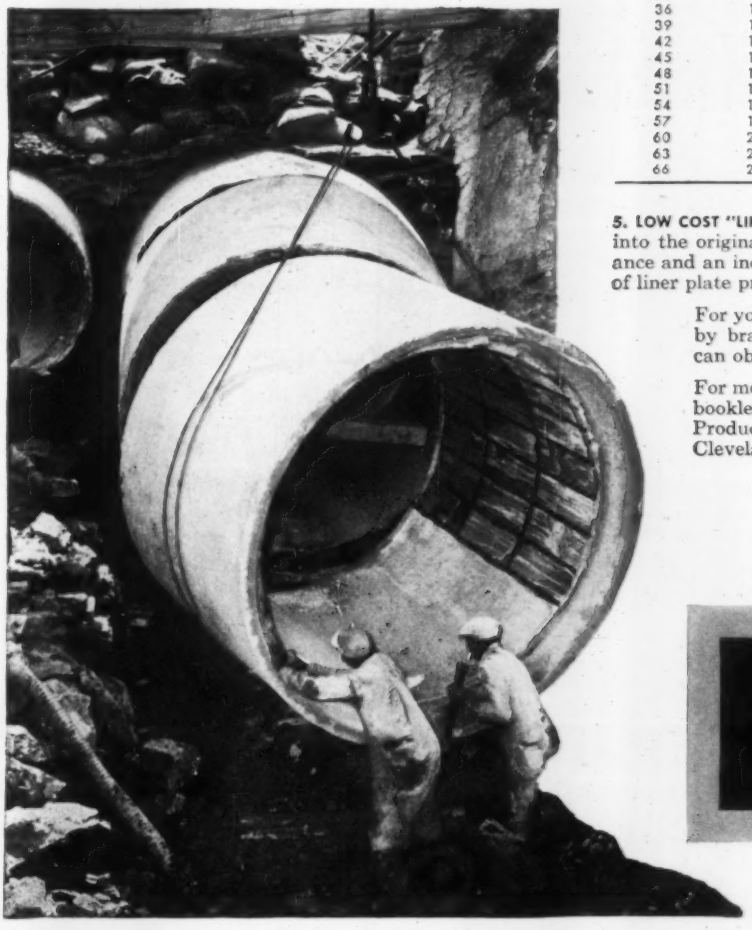
CLAY LINER PLATES ARE UNAFFECTED BY EROSION, ABRASION OR CORROSIVE ACIDS OR GASES

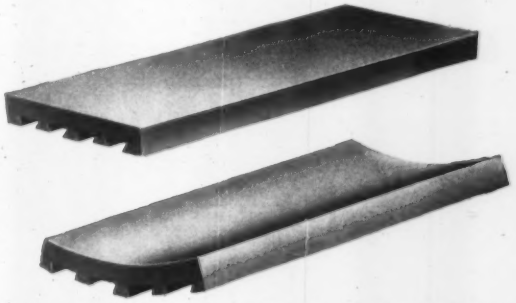
For complete protection of concrete pipe sewers, industrial sewers, acid vats, sewage treatment tanks, neutralizing baths, culverts, retaining walls, and bridges use Amvit clay liner plates for these five big reasons:

1. RESISTS ACID ATTACK — Amvit Liner plates are specially manufactured to meet all application requirements which entail resistance to acids, alkalies, and chemical reaction. They are made of the same high grade clays that go into famous Amvit sewer pipe. They are formed, dried, and vitrified to obtain clay pipe density and hardness.

2. PREVENTS ABRASION — Amvit Liner plates are not affected by the wearing action of sand, rocks, gravel, or other solids often encountered in streams and rivers. They protect all surfaces against corrosion and abrasion.

3. EASY INSTALLATION — Amvit Clay Liner Plates, hardened, glazed, and durable, permanently bond and lock to masonry and concrete work. They are easily installed on concrete forms and are sized according to standardized specifications for uniform spacing.





4. SIZES FOR EVERY JOB — To meet the applications of liner plates in industry, sewerage, and drainage, they are manufactured flat or curved, in 24-inch lengths, 9 inches wide. Lengths under 24 inches for special applications are available on request.

STANDARDS FOR CURVED LINER PLATES

Diameter Sewer	Pieces Required For Circle	Radius	Diameter Sewer	Pieces Required For Circle	Radius
Inches	Number	Inches	Inches	Number	Inches
24	8	12	69	23	33
27	9	13½	72	24	33
30	10	16½	78	26	45
33	11	16½	84	28	45
36	12	18	90	30	45
39	13	21	96	32	45
42	14	21	102	34	45
45	15	21	108	36	60
48	16	24	114	38	60
51	17	26¼	120	40	60
54	18	26¼	126	42	60
57	19	26¼	132	44	60
60	20	33	138	46	60
63	21	33	144	48	72
66	22	33			

5. LOW COST "LIFE INSURANCE" — Building Amvit Liner Plates into the original structure assures a reduction in maintenance and an increase in life expectancy far beyond the cost of liner plate protection.

For your next job, specify *Amvit Clay Liner Plates* by brand. Your local concrete pipe manufacturer can obtain them on short notice.

For more information, write or call for our detailed booklet on Amvit Liner Plates. American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.

SINCE 1848

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CLEVELAND, OHIO

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When the job must *keep going* despite mud and rain, your men can work with the complete *protection—plus—comfort* which Goodall waterproof clothing provides. Coats, Jackets, Overalls and Suits . . . in high-quality rubber, oiled or latex constructions . . . made with exacting care to assure full-cut comfort, thorough waterproofing and long-wear economy. Reinforced where extra strength is needed, without impairing freedom of movement. Available in a variety of styles, in all sizes.

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Light weight and comfortable, yet providing greatest possible head protection. Exceed highest established requirements for strength, heat and moisture resistance, and dielectric tests. Made of fibreglass and aluminum, in white and colors.

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Famous for comfort, safety and long wear. Made from smooth, tough, flexible black rubber, heavy duck lined. Cushion insole. Tire-tread sole. Reinforced steel safety toe, with white toe cap for identification, is tested to withstand 2,000 lbs. pressure. Available in Short, Storm King and Hip styles, *all with permanently marked size numbers.*

The "Toe-Saver" feature is also available on a variety of work shoes and on our "Contractors" Mucker Boot.

Contact our nearest branch for further details and prices covering the items shown here and other clothing and footwear products in the Goodall Quality Line . . . your best buy for on-the-job wet weather protection.

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Steel Exec Disputes Cost Comparison

Sir—The article, "Prestressed Bridge Girders Span 151 Ft" (ENR March 6, p. 68), presents a misleading picture by misrepresenting the comparative costs of steel and concrete bridges.

The article points out that the alternate designs of the two 151 ft spans were made on the basis of simple spans for the steel and continuous framing for the prestressed concrete. Many cost studies show that the economical design for structural steel is not simple spans but continuous spans. If the cost comparison shown in the article had been made on the basis of continuous spans for both structural steel and prestressed concrete, it would have been more realistic and certainly fairer.

The information we have indicates the figures used by Professor Lin in his "fair" comparison are not correct. Unfortunately, erroneous figures for two of the prestressed concrete bids were published locally. Prices given as $75,754 and $82,000 should have been twice these amounts. The partial bids received for the two 151 ft spans, including deck, were actually as shown below:

Bidder	Prestressed Concrete	Structural Steel
1	$180,000	—
2	151,508	$142,935
3	194,500	154,000
4	164,000	163,500
5	—	143,500

The difference between these bid prices and Professor Lin's "fair" comparison suggests that those who must deliver the goods have included all component items for the bridge and at a figure that more nearly resembles their cost. It is noteworthy that Professor Lin, expert that he is in prestressed concrete, finds its cost 10% less than the lowest bid price, while he readily finds the cost of the steel structure equal to the highest bid price.

Total bid figures are:

Bidder	Prestressed Concrete	Structural Steel
1	$1,421,731	—
2	1,470,912	$1,462,339
3	1,474,530	1,434,030
4	1,620,350	1,619,815

Only one bid that includes prestressed concrete is lower than the lowest bid incorporating the structural steel, and it is low by less than 1%. Since there is no correlation between the No. 1 bidder's figure for the two prestressed spans and the amount he bid for the entire job, it becomes evident that factors other than the cost of the prestressed spans controlled the contract price, and we must, therefore, altogether differ with Professor Lin.

For the reasons above, we are convinced that the inferences drawn by Professor Lin are in error. His cost comparisons are not valid and his article becomes an unwarranted promotion of prestressed concrete.

Besides this, we wonder why ENGINEERING NEWS-RECORD published an article featuring prices for structural steel that no longer exist. We would like to make an observation that we believe should be given serious consideration. Your magazine can do a real service to the highway program and designing engineers by keeping the latter informed of the going prices for bridges.

B. J. OSBORNE
Assistant to Vice President
Kaiser Steel Corp.
Oakland, Calif.

Concrete Designer Defends His Figures

Sir—In discussing relative economies, especially when a new type of construction, such as prestressed concrete, is challenging a more conventional material, it is important to be impartial—which the author tried to be by consulting several engineers and contractors.

Mr. Osborne evidently misinterpreted the article with regard to bidding costs. The article states clearly that owing to the unbalancing of itemized costs, the range of bids was large. Furthermore, a quote from a letter written by Pacific Bridge Co., the general contractor, after completion of the job, will testify to the author's conservative estimate of $135,000 for prestressed concrete:

RIVER SPAN COSTS

Access Trestle (prorated)	$2,800
Falsework—$1.00/sq ft	10,700
Form Mt'ls—0.25/sq ft	7,300
Form Labor—0.65/sq ft	19,000
Prestressed Cables	30,400
Cables, stress & place	15,260
Concrete—$14.50/cu yd	10,200
Concrete, place—$3.30/cu yd	2,340
Equipment—(Approx)	2,500
TOTAL	$100,500

The author believes that medium span bridges, as exemplified by this bridge, can definitely be cheaper than steel bridges under certain and perhaps prevailing conditions, but not under all conditions. This concept has been proven conclusively in the case of short-span bridges.

Similarly, continuity is not always the answer to economy of bridges. In the case of this bridge, the county design engineers found that due to composite action with the concrete deck, simple-span layout was cheaper and more feasible for the steel design.

This article was written to narrate one case for the reference of the reader. If it is a promotion of prestressed concrete, it is because of the favorable cost analysis by "those who delivered the goods," namely, the general contractor. The author sincerely believes that the fittest and most economical system will eventually win out in this free, competitive economy of ours.

T. Y. LIN
Professor of Civil Engineering
University of California
Berkeley, Calif.

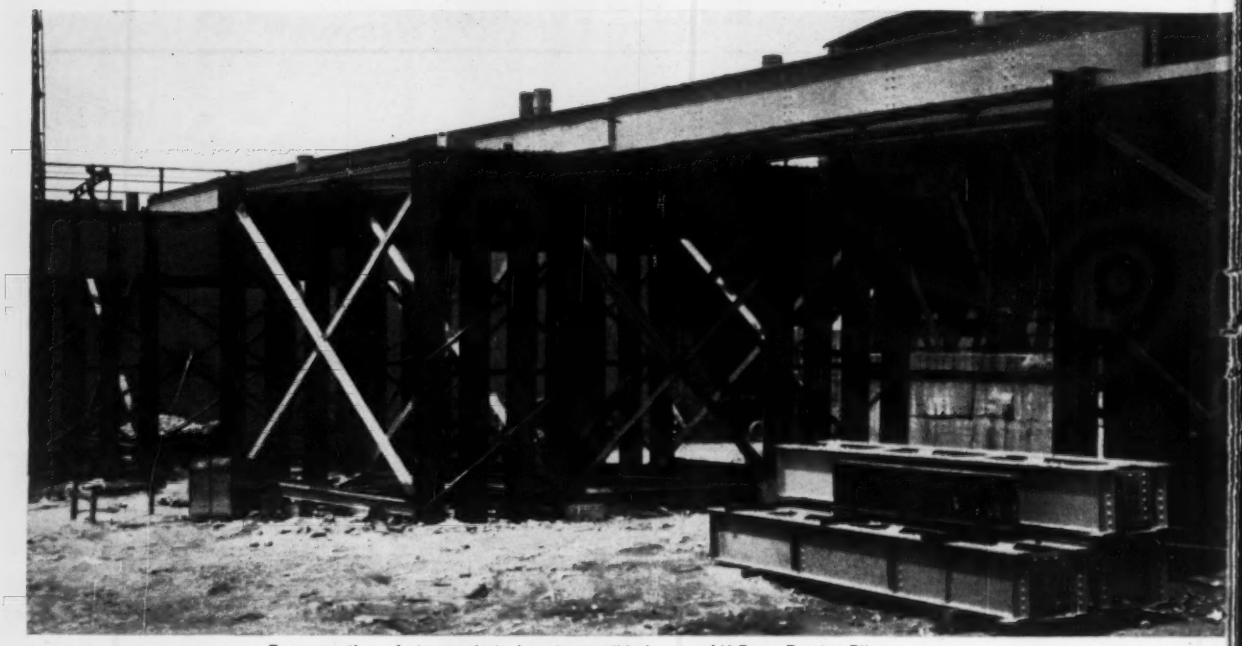
Hydro and Steam

Sir—The basic idea in the editorial, "Changed Power Concept" (ENR July 24, p. 96), is that steam power has gradually been accepted as a source of peak energy to supplement hydro energy during the periods when hydro plants have an insufficient supply of water available, or have their storage lakes drawn down so low that the plant output is limited by a combination of low flow and low head.

The increasing dependence that is being placed on steam power in the TVA system, and perhaps in other large systems, is not the result of a sudden awakening to the advantages of steam to fill in these dry weather periods, but rather to increasing load demands that cannot possibly be met by a hydro system that is already fully developed.

The only way in which the new loads can be carried by the system is to build steam plants, which can operate for long periods of time in wet or dry

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.



Easy erection of structural steel made possible by use of H-Beam Bearing Piles.

Railroad jumps superhighway on USS Steel H-Beam Bearing Piles

They do things in a big way in Chicago. This maze of USS H-Beam Bearing Piles will soon carry four main tracks of a major railway over a temporary trestle spanning the new Northwest Route Expressway. Thus, traffic can flow on the railroad while the new overpass is being built.

This is an excellent example showing the versatility and strength of steel bearing piles. In this case, the piles are doing double duty. They serve as end bearing piles supporting the dead load of the temporary structural steel trestle, and, in addition, they serve as structural column bents wherein they must resist the heavy loads caused by moving trains, such as bending, sway, and thrust.

In addition to their great strength and rigidity, the value of steel bearing piles is further enhanced by the speed and ease of installation and the minimum amount of fabrication required to complete the trestle. A total of 2,410 tons of Steel H-Beam Piles were used in lengths from 45′ to 98′ and weights from 73 to 127 pounds per foot. As an example; the 95′ piles were driven about 65′ into the ground at a rate of 18 to 20 per 8-hour day. **When the excavation is completed,** the piles will protrude about 45′. This is another reason for the choice of steel bearing piles. Any other pile as a substitute would expand the congestion problem and make excavation very difficult. In order to equal the strength and rigidity of steel, other types of piles would of necessity have to be more numerous and intricately braced.

For information on the use of USS H-Beam Bearing Piles, write for our free book. United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

The Project

Interstate Route No. 2, Northwest Route Expressway. Railway grade separation. Temporary Trestle. W. Kinzie St. to W. Hallard St. **Owner:** City of Chicago, Dept. of Public Works, Bureau of Engineering. **General Contractor:** W. E. O'Neil Construction Co., Chicago, Ill. **Sub-Contractor, Pile Driving:** Fitz Simons & Connell Dredge & Dock Division of Merritt-Chapman & Scott Corp., Chicago, Ill. **Participating Agencies:** Bureau of Public Roads, Cook County Highway Dept., State of Illinois Division of Highways.

USS Steel H-Beam Bearing Piles to support four main tracks of a major railway on temporary trestle. Steel supplied necessary strength without bulk.

USS is a registered trademark

United States Steel Corporation — Pittsburgh
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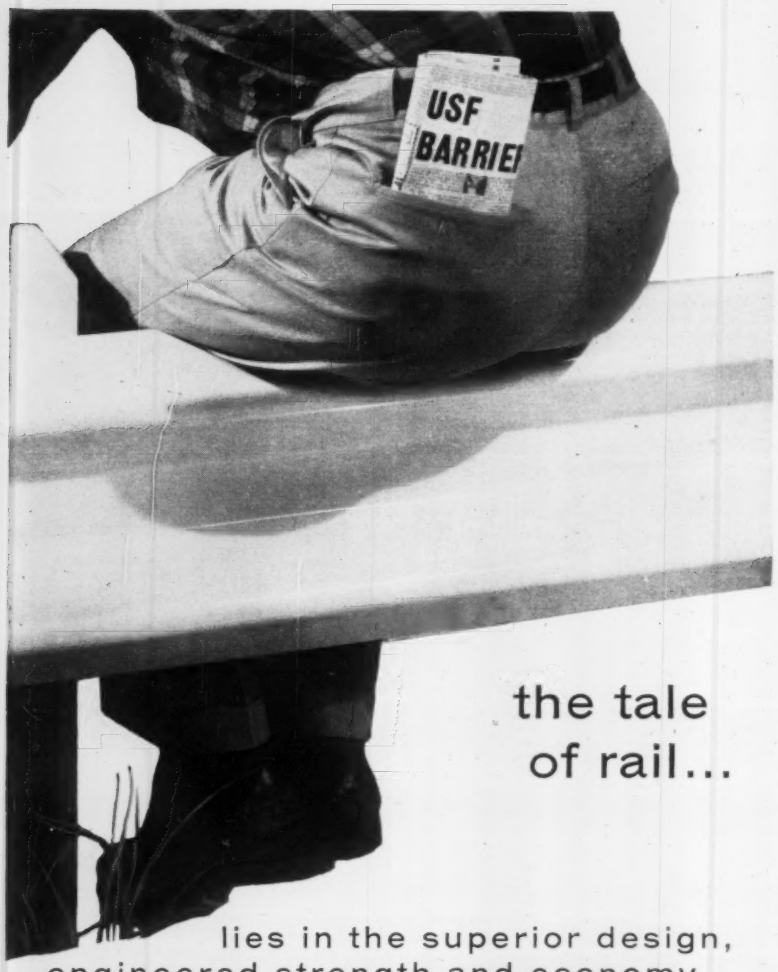
USS United States Steel



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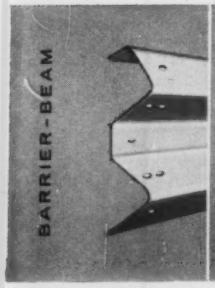

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weather at rated capacity. The result of this in the TVA system has been to depend more on steam for base loads, using hydro to fill in the peaks. Thus the old concept of hydro for base loads and steam for peak loads is being reversed, and in hydro systems of limited head and water this must inevitably be true as loads grow beyond the firm capacity of the hydro system.

JULIAN R. FLEMING, *Director*
Division of Sanitary Engineering
Tennessee Department of Public Health
Nashville, Tenn.

The Trouble in Iraq

Sir—We read with interest your article "Construction's Stake in Iraq" (ENR July 24, p. 23).

Michael Baker, Jr., Inc., at the present time, is associated in a joint venture with the Harza Engineering Co. of Chicago on the supervision of construction of the Derbendi Kahn Highway. Fortunately, however, the single Michael Baker, Jr., Inc., employee assigned to the project to date was in London testifying in an arbitration case for the Iraq Development Board. The only Harza employee assigned to this project, John Atkinson, however, was in Baghdad. Harza has a number of other personnel assigned to various engineering projects throughout Iraq.

Please accept our congratulations on this most interesting and informative article.

RICHARD L. SHAW
Assistant to the President
Michael Baker, Jr., Inc.
Rochester, Pa.

Retaining Wall Question

Sir—In a recent discussion on base-slab design for counterfort retaining walls, I found opinions differing on bending moments in the slab. When the base slab cantilevers in front of the vertical wall for about one-third of the total base width, there is considerable bending moment in the cantilever. The disagreement lies in how this moment affects the part of the slab behind the vertical wall.

"Bridge Engineering," Volume I, by J. A. L. Waddell, states that the moment from the cantilever toe produces a downward load in the rear portion of the base slab. It says further that this load is approximately of parabolic distribution, the base length of the parabola being 0.6 times the counterfort spacing and its center of gravity being behind the rear face of the wall a distance of 0.3 times the counterfort spacing. This load is additional to the difference between the weight of earth

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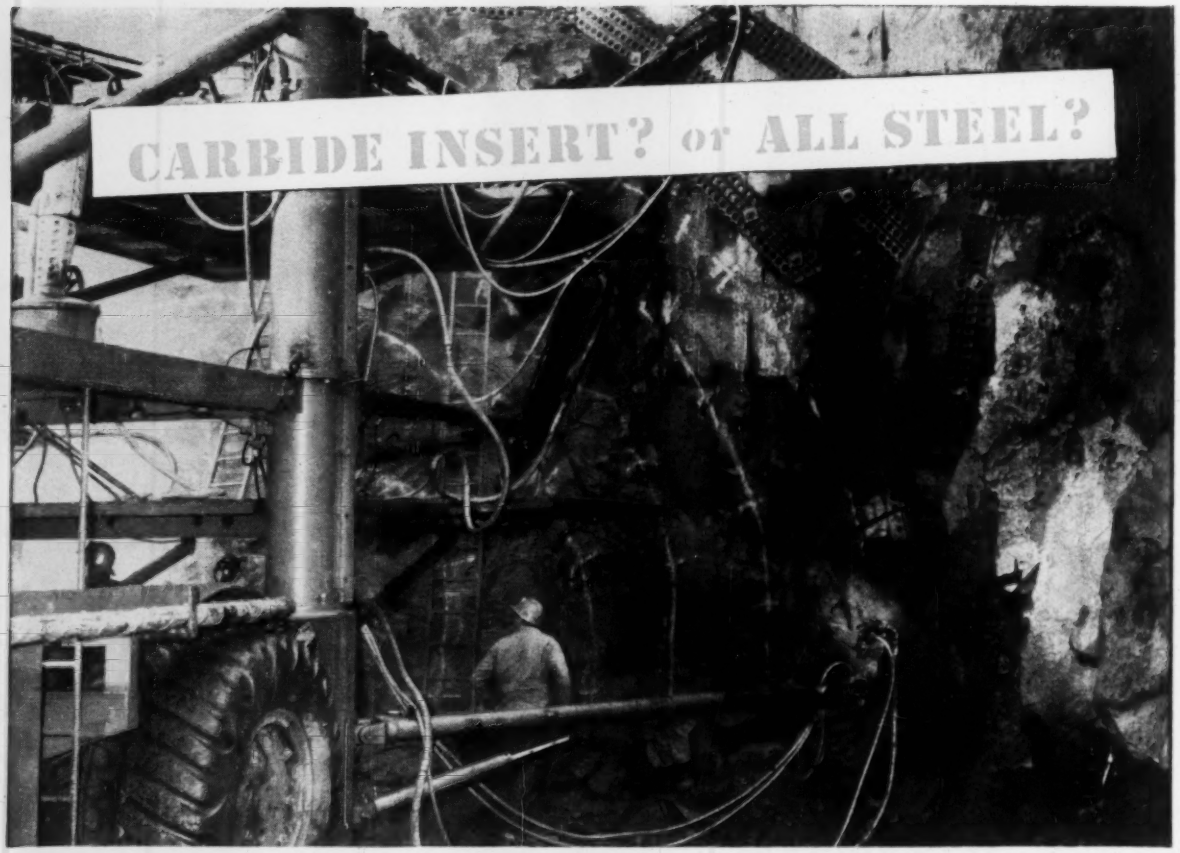

LOCATION: Mayfield Dam site, near Saukum, Washington. **OPERATING CONDITIONS:** Medium blocky basalt.

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DRILLING a diversion tunnel for the city of Tacoma's Mayfield Dam, Gibson and Roberts, rock drilling specialists of Yardley, Washington, had to chew through medium blocky basalt. For highest economy drilling through this hard ground, they used Timken® carbide insert rock bits with their jumbo drill rig.

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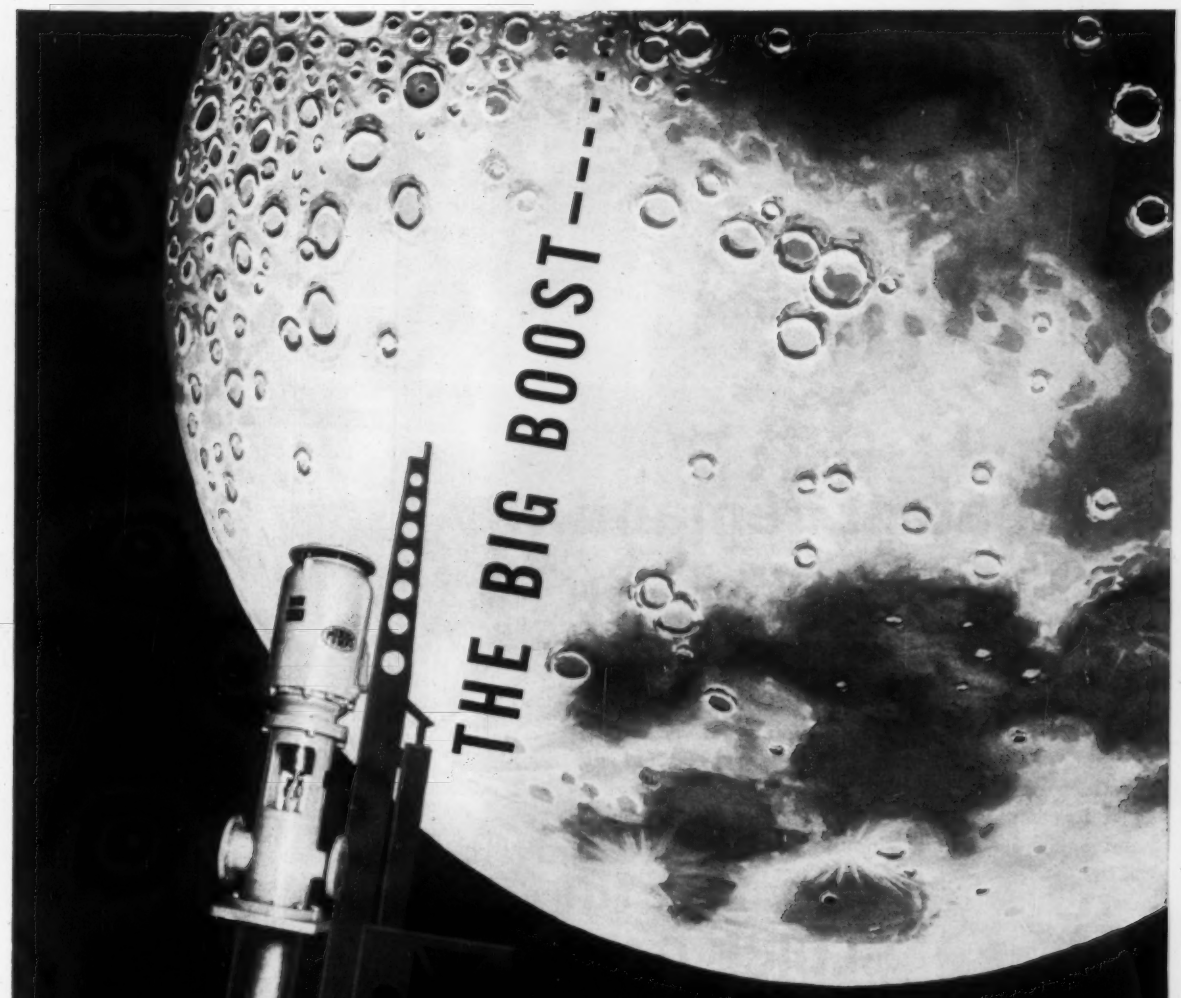

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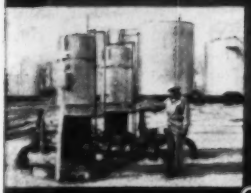

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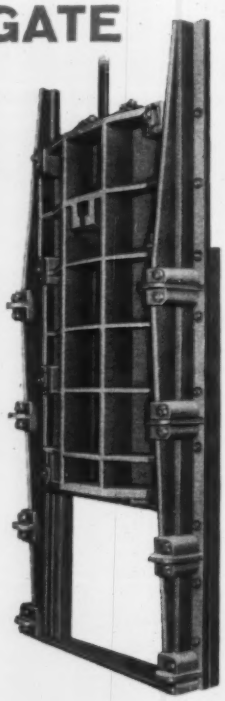

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above the base slab and the upward pressure from the soil beneath.

Other text books make no mention of this additional load and completely fail to explain how the moment in the cantilever toe is resisted in the structure. The matter is of some importance as in many cases the additional parabolic load on the base slab is considerably greater than the net earth load.

I should be interested to read the comments of others who have considered this problem.

J. D. Watts
Bridge Engineer's Office
Department of Highways
Victoria, B. C., Canada

A Matter of Terms

Sir—The excellent article on stamps commemorating engineering events (ENR June 26, p. 36) seems to me to convey an erroneous impression. It is probably factually accurate to say that the Mackinac stamp is the first to be issued to commemorate a "dedication," but the 2¢ Panama-Pacific Stamp issued in 1913 was to commemorate the completion of the Panama Canal, although it was not formally "dedicated" until 1915. The first ship transited the canal on August 15, 1914.

Thorndike Saville, Director
Science and Technology Center Study
University of Florida
Gainesville, Fla.

Sir—Previous stamps commemorating engineering feats include Ohio River Canalization (1929) and Boulder Dam (1935).

But thanks for publishing the article anyway.

Berwyn B. Thomas
Research Division
Ravonier, Inc.
Shelton, Wash.

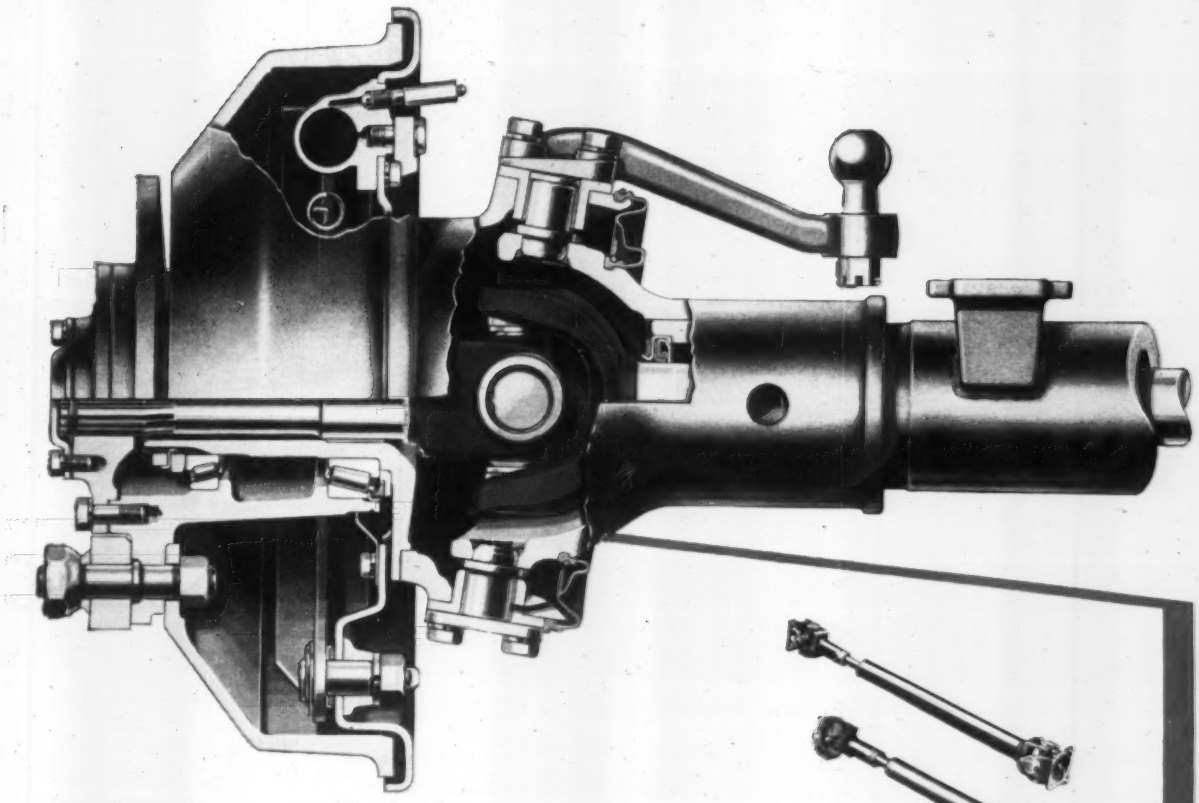
Editor's Note: There appears to be a number of stamps commemorating completion of engineering projects. However, since completion and dedication in many instances are widely separated, it did seem valid to make the point that the Mackinac stamp issue was the first, in this field, to coincide with the dedication.

CALENDAR

Producers' Council, Inc., 37th annual meeting and chapter presidents' conference, Dupont Plaza Hotel, Miami, Fla., Sept. 17-19.

Michigan Aeronautics Conference, 6th Annual. Sponsored by Michigan Association of Airport Managers. Mather Inn, Ishpeming, Mich. Sept. 17-19.

Prestressed Concrete Institute, annual meeting and convention, Edgewater Beach Hotel, Chicago, Ill., Sept. 21-25.



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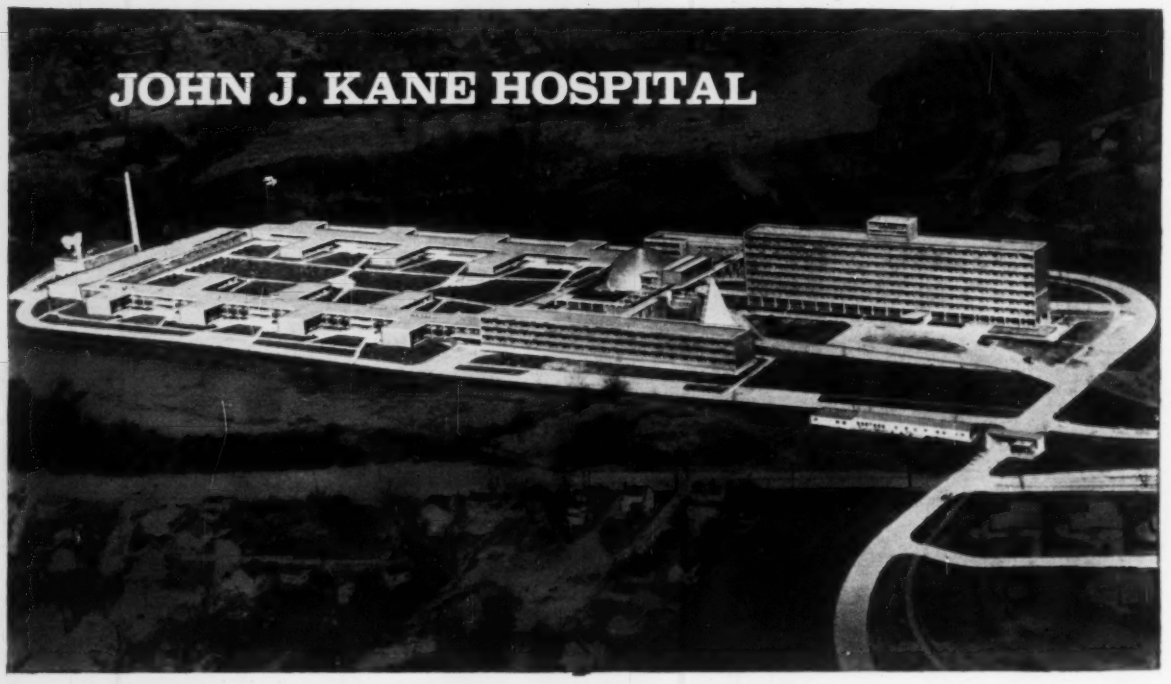

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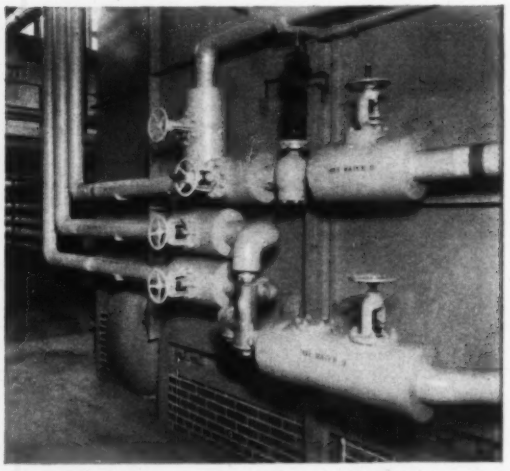

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LOOK FOR THE JENKINS DIAMOND

VALVES

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ENGINEERING NEWS-RECORD

Vol. 161, No. 8 August 21, 1958

Number of copies printed this issue 83,157

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THE CONSTRUCTION WEEK

ANOTHER HURDLE CLEARED—New York City's Narrows Bridge moved another step closer to reality last week: The City Planning Commission approved its controversial $79 million approach through Brooklyn. Now the Seventh Avenue approach will be contested before the city's Board of Estimate. The $260 million bridge will tie Brooklyn to Staten Island, across the channel entrance to the Port of New York's Upper Bay; its 4,400 ft center span will be the longest in the world, 200 ft more than the Golden Gate's. The Port of New York Authority and the Triborough Bridge and Tunnel Authority are developing the project.

CAPITOL EXTENSION CLOSER—Senate action last week enhanced the chances of the proposed reconstruction of the U.S. Capitol in line with the 100-year-old plans of Thomas U. Walter, designer of the present dome. Strong opposition to the extension led to introduction of a Senate bill to block it (ENR Mar. 27, p. 100, Apr. 24, p. 136). Last week, the Senate finally voted 47-32 to reject the bill.

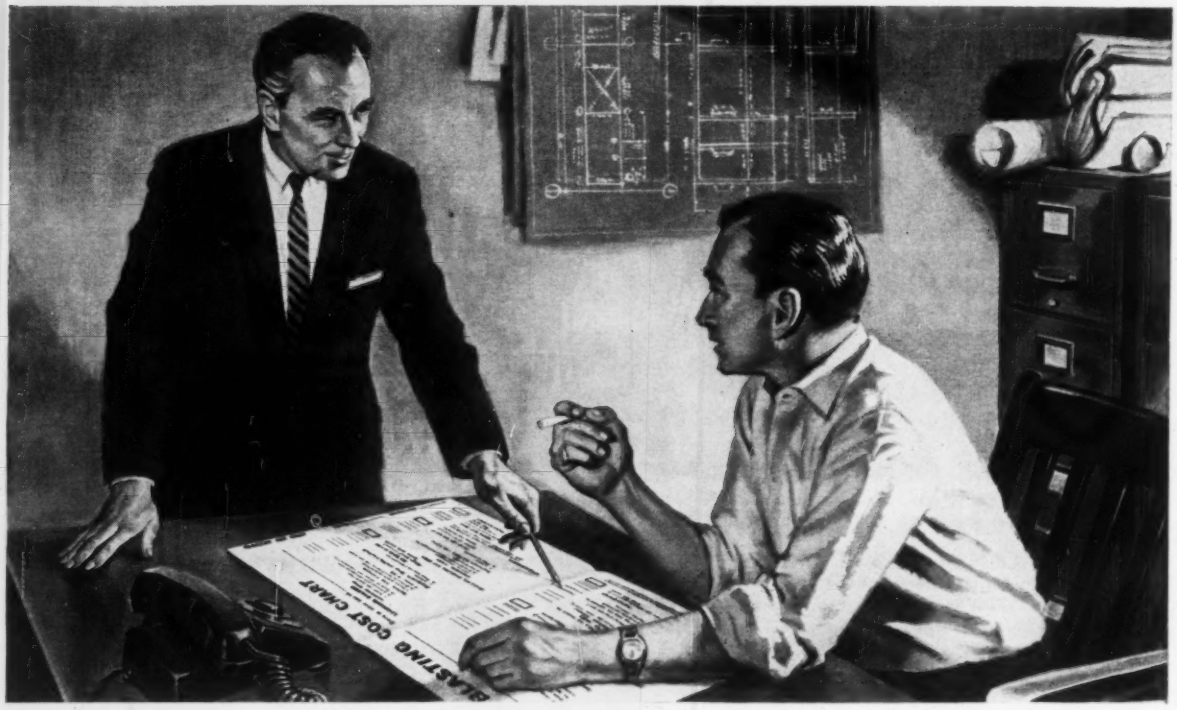
FORGET THE ANTIHISTAMINES—Hayfever victims using the Pennsylvania Turnpike can leave their medicines at home. A heavy weed-killing campaign last week reduced the pollen count to less than 1/100th of 1% over a 320-325 mile area.

HOW TIMES CHANGE—Two government agencies are reconsidering their recommendations favoring reinforced concrete framing. The Public Housing Administration is advising its regional directors: "There may be areas and particular types of buildings for which structural steel frames with lath and plaster fireproofing and lightweight floor systems will prove more economical than reinforced concrete framing." General Services Administration reportedly is making the switch in a revision of its Structural Engineering Handbook.

THIRD TIME A CHARM?—Toledo voters have rejected for the second time a tax increase to help pay for an $89 million expressway program. In May a property tax hike was voted down by a 3,000 vote margin. This time it was rejected two to one. In November the issue will come up again in different form—a 0.5%, five-year payroll tax.

JOIST STRESSES RAISED—Allowable unit stresses for open-web steel joists will be jumped from 18,000 to 20,000 psi next January 1. The Steel Joist Institute will make load tables based on the higher stresses available on October 1. Copies can be obtained from C. H. Luedeman, SJI managing director, DuPont Circle Building, Washington, D. C.

WHAT ARE YOUR TRUE BLASTING COSTS?



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WASHINGTON OBSERVER

- **Highway fund ceiling going off again**
- **Congress kills urban housing bill**
- **Fannie Mae gets another $100 million**
- **President may veto public works bill**

● **Congress next year will again suspend—or perhaps repeal this time—the ceiling on highway trust fund spending.** The ceiling in the 1956 law (the Byrd amendment) says the Commerce Department may not allocate more funds to the states than is coming into the trust from taxes.

This year Congress suspended the ceiling for two years to pass the anti-recession highway law increasing federal outlays over four years. Hence the ceiling needs removing, or else the increased allocations will be voided.

—

● **Congress Monday pushed aside a huge housing bill** covering aid to urban renewal, college housing, rental housing, and liberalized credit terms for FHA mortgages.

This is the regular omnibus housing bill that Congress passes about every year. The bill totaled about $1 billion.

Much of the sting of the turndown is dissipated because of the anti-recession housing bill that became law April 1. This eased FHA terms for low-priced housing, put new money into the GI home loan program, and boosted Fannie Mae's funds to provide a sure market for government-backed mortgages.

College housing loans will be hit first if nothing is done; the loan fund is just about dry.

Urban renewal would be hurt, but there's a possible offset in the $100 million President Eisenhower can still release to the cities.

Homebuilders are disappointed in the rejection of the new plan to help conventional mortgage financing by insuring the top 20% of conventional mortgage loans of banks and savings and loan associations. They figured this would have the effect of reducing downpayments on houses not under FHA and VA programs.

—

● **President Eisenhower helped housing prospects last week by releasing to FNMA another $100 million** for FHA and VA mortgages. That leaves only $150 million left of the $1 billion Congress approved this spring. At the rate the money is being committed, the barrel will be empty in a couple of months or so.

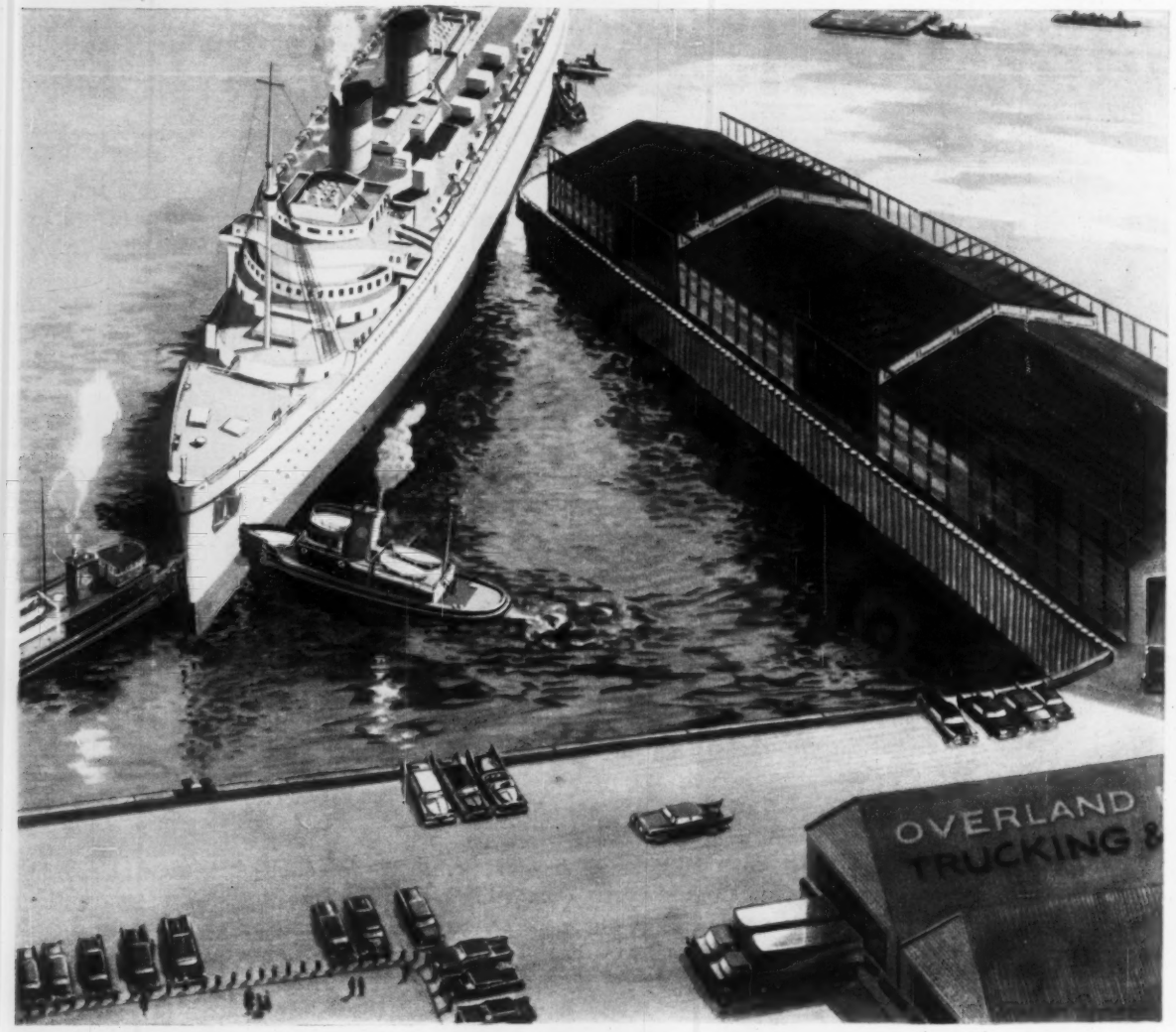
The industry had been counting on the omnibus housing bill to be the stimulant that would take hold when this special fund ran dry.

—

● **There's money for a bundle of new starts in the $1.1 billion public works appropriation bill sent to the White House this week.** The bill covers rivers and harbors, reclamation and flood control.

The Administration wanted no new starts at all, which raises the question of a veto. Congress voted only $41 million more than the President asked —which in itself would not be enough to fuss about. But the unbudgeted starts will cost hundreds of millions to complete—and President Eisenhower takes such things seriously, as he has shown in vetoes this year and last.

MARINE FENDERS



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With $200 billion of public works needed . . .

- **What is being done by the President's public works aide, Gen. John Bragdon (right)?**
- **What should he be doing?**
- **What will Congress let him do? What is . . .**

The White House Role in Public Works?

Last week was Gen. John S. Bragdon's third anniversary as the first special White House assistant to coordinate public works planning on federal, state and local levels.

Today General Bragdon can point to little in the way of tangible accomplishment toward coordination; public works planning is not much more coordinated than when he began. But he has been surprisingly successful as a symbol and force for more and better planning, particularly on the state and local levels.

John Bragdon, in effect, has been selling construction, a staggering amount of it. In 1955, the Department of Commerce pegged the 10-year requirement for major state and local public works at $204 billion. This included three components: deferred needs, replacement and growth. About the same time a Bragdon survey showed only $28 billion of projects in various stages of planning.

The ENR backlog of proposed construction in this category was $34 billion in December, 1954, a fairly good check on the Bragdon figure. Today, ENR's backlog shows $50 billion of state and local public works.

Some part of that increase is due to the general's evangelism.

1. The Assignment

Putting a coordinator for public works planning on the White House staff was a new approach to an old problem. Presidents before Mr. Eisenhower had fretted at their inability to exercise executive control over the construction programs of the federal government. When depression struck the economy, they deplored the lack of information on state and local plans for public works. But their methods of attempting to remedy the condition had never included an official on the President's personal staff.

In 1955, President Eisenhower ducked a likely turndown in Congress by creating the new staff position under his executive powers. Congress never has relished the idea of a White House coordinator for the civil works programs of the federal government. The legislators are jealous of their prerogatives in determining what projects shall be authorized and financed by the federal government. They maintain that Congress is fully competent to decide whether a program or a project merits federal support.

Without statutory authority, however, the role of coordinator is severely limited with respect to federal public works. The President made that clear in creating the new post. For federal public works, as well as for those of state and local governments, General Bragdon's activities were to be of a cooperative nature. He was given authority to call on the federal agencies for information and assistance in his coordinating job, but this function in practice is restricted almost entirely to collection of statistics.

2. The Evangelist

General Bragdon also was instructed to invite planning information from the officials and public works agencies of state and local governments. Additional authority to promote and encourage sound long range planning of local public works was implicit, but not spelled out, in his instructions.

The general has made this promotion his major mission. He and his small staff—never more than 10 people—have devoted much, if not most, of their time to a systematic attack on the problem of effective forward planning of public works by governmental bodies.

Their first job was an exhaustive study to determine the essentials of coordinated long range planning. With these established, Bragdon's office swung into the follow-up task of spreading the gospel by pamphlet and public speeches, with the general himself doing the talking.

Most of this effort at present is aimed at local governments, to stimulate the planning of counties, towns, cities and states. In this field General Bragdon's preaching fits perfectly into the Eisenhower doctrine that local governments should shoulder their own

responsibilities whenever it is possible.

The Administration itself has no desire to use more federal funds to encourage the kind of local public works planning its spokesman advocates. But the ideas spread by the President's coordinator are having some surprising side effects back in Washington.

Three weeks ago, a House bill that would authorize federal grants to stimulate comprehensive planning by state and local governments was introduced. It has little chance of passage this session. But some of the language in the bill carries heavy overtones of General Bragdon's speeches.

General Bragdon has been giving these facts to all who would listen:

- The public works plant of the U.S. is built by many hands, over 102,000 units of government. There are some 40 federal agencies, 53 states and territories, 3,000 counties, 12,000 special districts, 16,000 municipalities, 17,000 townships and 50,000 school districts, all doing public construction.
- The country's 174 major metropolitan areas, which contain 57% of the total U.S. population, are experiencing 97% of the population growth. These areas have 16,425 component governments, nearly all of which have deficiencies in public works facilities.
- The $28 billion worth of projects in planning stages in 1954 means that state and local planning is only current, no more than three years ahead (based on $9 billion of public works construction in 1954).
- Metropolitan areas should set up a single governmental unit with powers to coordinate all public facilities planning into a comprehensive program.

The general then launches into his definition of comprehensive planning. It is a four-stage operation that calls for: (1) projecting and measuring needs some 20 to 50 years ahead for each type of facility; (2) preparing balanced long range plans for 15 to 20 years, (3) settling on a capital improvement program for the first phase of five or six years, and (4) presenting the budget requirements for projects to be started in the next fiscal year, backed up by complete plans and cost estimates, plus the reasons for giving top priority to the selected projects.

This is the kind of systematic forward planning that the recently introduced House bill aims to encourage. As a means of gaining that end, the measure adopts the Bragdon concept of an area-wide planning unit.

3. The Coordinator

The grants for planning authorized in the bill before Congress would supplement the federal loan program for public works planning under the Housing and Home Finance Agency (ENR Aug. 14, p. 24). Congress also helped General Bragdon by its approval of up to $50,000 a year for an annual updating of the status survey of state and local plans for public works. Throughout the present slump, the President's coordinator has been embarrassed by not having information beyond his 1954 survey.

One question naturally arises: Do these concessions by Congress to help the coordinator's objectives in the state and local field imply any change in Congressional thinking on the over-all concept of a coordinator for public works planning in the President's office? As of now, the answer is no.

On the federal side, Coordinator Bragdon has moved softly in carrying out his limited assignment. The executive departments and agencies have cooperated with him precisely to the extent specified by the President's instructions. The coordinator's office receives promptly all the information it requests. But there is no free interchange of ideas.

Coordination, as presidents and numerous advisory groups have viewed it, should be directed first to integration of federal programs. Paradoxically, General Bragdon is trying to sell to states and localities a system that the federal government has never adopted.

There is no sign at present that Congress would agree to another office in the executive branch. Legislators contend this would further hamper or delay transmission of project proposals and reports for their consideration. The Bureau of the Budget, they assert, does an adequate coordinating job for the President.

Executive agencies such as the Army Engineers and the Interior Department, however, gave their assent to the proposals for a coordinator and a board of review in the water policy report. But national organizations that support the programs of these agencies—the Rivers and Harbors Congress and the Reclamation Association, for example—still regard a coordinator as totally unnecessary.

4. The Accomplishments

General Bragdon's performance in filling the gaping hole in federal leadership in public works planning must be measured in terms of the scant powers President Eisenhower was able to give him.

Washington agencies certainly have no criticism of the way the coordinator has handled his federal duties. However, staff chiefs in the Corps of Engineers, the Reclamation Bureau, the Public Buildings Service and other agencies wonder sometimes if the special data add anything to similar information regularly supplied to the Budget Bureau.

And almost to a man, they regard the coordinator's office as a temporary creation due to expire when President Eisenhower leaves office. This apparently is also the view of Congress.

Economists decry his recommended procedures for long range planning as vague, visionary and unworkable.

In the opposite corner, however, you find a large group of municipal, county and other governmental officials, architects, engineers and general contractors who say they already discern results of his evangelism in better forward planning by state and local governments. They claim, too, that his preaching is alerting the federal government, both the Administration and Congress, to the urgent need for orderly and logical advance planning throughout the nation.

These persons and their local and national organizations provide the strongest support for General Bragdon and for the coordination of public works plans.

5. The Man

John S. Bragdon became a special assistant to the President after a career in construction that began in 1915 when he was commissioned in the Corps of Engineers.

At the outbreak of World War II, he became director of $2 billion emergency construction in the southeastern U.S. and Latin America. With that job well in hand, General Bragdon was called to Washington headquarters to take over direction of Corps programs on a global scale, first as assistant chief for military construction and later as deputy chief in charge of both military and civil works.

Following his retirement from the Corps in 1951, General Bragdon went into private construction for three years as vice president of Vermilya-Brown Co. of New York City. In 1954 he joined the Eisenhower Administration as public works consultant on the staff of the President's Council of Economic Advisers.

In his present post, General Bragdon thinks of himself as spokesman for public works—and inferentially for all construction—at the White House. In Washington he makes himself inconspicuous, sticks tightly to his concept of a staff officer's job. When addressing conventions and meetings across the country, which is often, he tells his public works planning story quietly and sincerely.

Federal Construction Outlays May Be Cut

The Administration's fear of inflation is bringing a policy reversal and the decision to start economizing

A shift of economic policy in Washington directly affecting the construction industry has gone into the planning stage on orders of President Eisenhower.

The Administration is turning away from the policy of the last six months when federal funds for construction were sharply increased.

The new plan, when it becomes effective, will cut down on this flow of money. The Administration will ask Congress to kill some programs, postpone others, and stretch out others.

Some of the thinking already may have been translated into action. ENR's federal construction contract awards now show a marked drop in volume. This week, federal awards totaled $45.3 million. Last week they were $36.1 million. Both were the lowest totals reported since mid-March.

Moreover, it was the fifth consecutive week that award volume dropped far below the mid-May to mid-July rate. Average weekly volume for the five weeks was $54 million, compared to $130 million per week from mid-May to mid-July.

Behind the move is the decision that recession no longer is a threat. Inflation is now seen as the major peril.

President Eisenhower and his chief economic advisors decided at a White House meeting last week that the time had come to swing the government into a program designed to curb price rises.

"We've been accelerating the economy," one official summed up after the meeting. "That period is over. There will be some changes."

The President's advisors do not feel that inflation is a clear and present danger. There's still softness in the economy. But they do feel that an inflationary psychology is spreading—a general expectation on the part of businessmen and investors that a period of sharply rising prices lies ahead. The Administration's economic experts think this is a mistaken reading of the business outlook. In their view, only moderate price rises are indicated. Some even argue that the general consumer price level will not rise at all over the next 12 months, due to an expected drop in food costs.

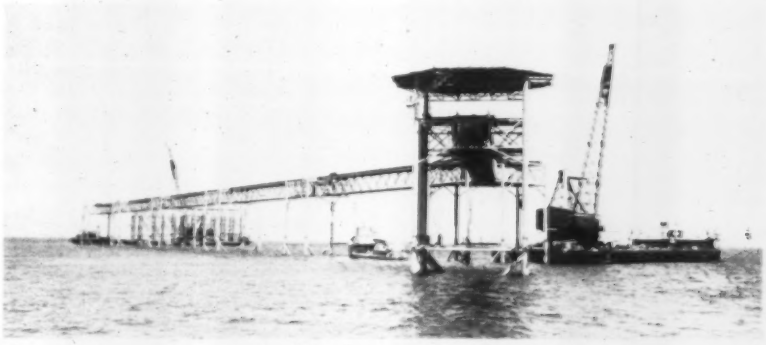
But an inflationary mood, harbored for a long enough period, can itself harm the economy by encouraging overordering and speculation. The Administration wants to prevent this possible trend. It is counting on two broad lines of attack.

First, it will do everything it can to revive the economy spirit that swept Washington last year, before the recession and the Russian Sputnik combined to give spenders a free hand.

This means the budget for fiscal 1960 will be given the sharp-pencil treatment before it goes to Congress next January. In addition to public works appropriations, the programs by which the government guarantees, insures or makes direct loans will be studied by the economizers. This involves construction projects ranging from private housing to water development.

• **First steps**—The Administration can take some steps without waiting for Congress. If housing costs, for example, show signs of rising rapidly, the White House can order downpayments on FHA-insured mortgages increased, and maturities shortened. Surveys have convinced the Council of Economic Advisers that higher downpayments are a particularly potent means of slowing down housing starts, if such a step is desired. Officials stress that no such plans are now in the works. But in the inflation-fighting mood now building up in the executive departments, housing will be carefully watched.

The second anti-inflation move will be a gradual tightening of credit under the management of the Federal Reserve Board. This became apparent last week when the Board allowed the Federal Reserve Bank in San Francisco to raise the discount rate—which has the effect of increasing the interest charges on all forms of credit (see p. 132). Other Federal Reserve Banks also were expected to raise their rates.



Mile-Long Bridge Starts, Ends in Gulf

This steel framework being erected in the Gulf of Mexico looks a lot like a bridge without land-based ends. Actually, it will be the supporting structure for an offshore sulfur mining plant.

The steel island will be nearly one mile long. It is the principal part of a $30 million project of The Freeport Sulphur Co., New York City, to develop a major, new sulfur deposit known as Grand Isle. It is being built in 50 ft deep water, seven miles off the Louisiana coast, almost due south of New Orleans.

The island will be Y-shaped and rise 60 ft above the water. It will consist of five large steel-pile towers and ten smaller ones, all connected by 200-ft-long steel truss spans.

The large towers will support major installations—seawater heating plant, three drilling platforms, living quarters and recreation area. One tower deck will serve as a helicopter landing platform.

The plant, which will employ 250 men in five-day shifts, will use 13 million cu ft of gas daily to heat 5 mgd of seawater to 325 F to melt the sulfur underground (Frasch process).

• **Water Work**—Piles for supporting the towers were located with the aid of prefabricated steel templets, weighing about 120 tons. The templets were positioned on the sea bottom by a barge-mounted 250 ton revolving crane. They will be left in place to serve as bracing for the steel piles, which are 237 ft long.

Bedell & Nelson, New Orleans, is the consulting engineer. McDermott Fabricators, Inc., Bayou Boeuf, La., fabricated and erected the steel for the basic structure.

Senate Roads Subcommittee hears highway officials defend their practices.

State Estimates OK'd for Interstate

State highway departments this week should be able to compute the amount of federal interstate money they are going to get for fiscal 1961.

That's the upshot of open hearings of the Senate Roads Subcommittee last week. Despite some wrangling and questions raised by the General Accounting Office, the subcommittee approved the 1958 cost estimates submitted by the states as a basis for apportioning interstate funds for fiscal 1961.

The full Public Works Committee has accepted the decision. What remains is to rush a bill through Congress before adjournment.

However, acceptance of the same estimates for apportioning fiscal 1962 money has been held back by the subcommittee. Instead, the subcommittee is asking for a one year advance in making the next estimates—that is, January 1960 rather than January 1961.

Up to last Friday, it looked as if the highway departments would be groping in the dark when called upon to present budget figures to their state legislatures in January. The states have known for three weeks precisely what their allocations are for fiscal 1960. Those allocations, announced July 28, were made on the basis of state-by-state cost estimates compiled in accordance with the 1956 Highway Act that set up the interstate program. Each state gets an amount proportionate to the estimated cost of completing the interstate mileage within its borders.

But the states had no assurance that the next two rounds of federal allocations would be made using the same estimates as a basis.

The 1956 law had specified that three annual allocations were to be based on needs estimates of the state, as presented to Congress early this year. But objections by the Senate Roads Subcommittee, in acquiescence to its chairman, Sen. Albert Gore (D., Tenn.), limited Congressional approval of the cost estimates to one year only—for the apportionment made last month.

No similar obstacles existed on the House side. From the beginning, the House Roads Subcommittee and its chairman, Rep. George H. Fallon (D., Md.), had been ready to endorse the needs estimates for apportioning interstate funds over three years. To carry out this intent, Chairman Fallon last month introduced a bill to make the estimates valid for the next two apportionments covering fiscal years 1961 and 1962. The House passed the bill and sent it to the Senate. But Chairman Gore bottled it up in the Roads Subcommittee until last week.

• **Pressure for action**—State governors and highway officials and their Senators and Congressmen in Washington had by this time become aroused. They said the delay would set back state planning for interstate construction, which must be projected three to five years ahead. And, more immediately, the delay would tie the hands of state authorities in getting highway budgets approved by their legislatures next January and February.

Federal highway funds become available to the states from the day the allocations are announced. The states can obligate the money for specific projects after that date. To aid state programming, the allocation of funds usually goes out to the states about twelve months in advance of the fiscal year.

These and other compelling reasons for approving the Fallon bill were brought out by members of the Senate Roads Subcommittee in knocking down Chairman Gore's proposal to hold the question open for further hearings in the next session of Congress. Three Republican Senators, Francis Case (S. D.), Thomas H. Kuchel (Calif.) and Roman L. Hruska (Neb.), waged the fight in an open session, with known support of some Democratic colleagues.

• **Estimates upheld**—These proponents of the Fallon measure had the united backing of federal and state highway officials. Federal Highway Administrator Bertram D. Tallamy showed the committee why interstate plans worked out by state highway engineers, and scrutinized by the Bureau of Public Roads, produce the best and most economical expressways to serve projected traffic. He emphasized that the states' estimates for completing their interstate mileage furnished honest and adequate bases for apportioning federal funds.

Commerce Secretary Sinclair Weeks and Under Secretary Louis Rothschild underscored Tallamy's faith in the estimates. But Chairman Gore kept repeating his doubts about the equality of standards and methods applied by the states in their geometric design of interstate highways, in their traffic projections and in their cost estimates.

• **GAO questions**—Mr. Gore's dissents were based mainly on a report the General Accounting Office made at his re-

George H. Staples,
General Accounting Office
He raised questions about state estimates for the interstate system, got these answers . . .

Bertram D. Tallamy,
Federal Highway Administrator
". . . Estimates are entirely adequate and sound for the purpose they were made for."

Charles M. Noble,
Ohio Highway Director
"Ohio's estimates are based on sound engineering judgment and made in good faith."

quest on its investigation of needs estimates prepared by 11 states (ENR May 29, p. 22). To back his contentions, Senator Gore twice called a GAO witness, Associate Director George H. Staples of the civil accounting and auditing division.

As in the earlier report, Mr. Staples practically disqualified the GAO as a critic of interstate designs and cost estimates by saying, "The basic elements of the state estimates were of themselves engineering matters or derived from engineering judgments. Because these judgments so substantially influence costs, we could not express an opinion as to the validity of the estimates."

However, he did note that GAO had found considerable variation among the 11 states in upgrading their designs above the minimum standards for interstate highways. BPR set the minimums as an absolute floor below which no state could go in interstate design. This, as Mr. Tallamy and other highway officials pointed out, was the customary, traditional and workable practice followed in highway construction. They said it carried out Congressional intent in specifying uniform standards for the interstate system in the 1956 act.

But Mr. Staples suggested the subcommittee consider whether some kind of non-rigid maximum standards might not be needed. This proposal drew fire from all sides. Mr. Tallamy said any kind of maximum standards, flexible or not, would have damaging effects on the freedom of design that now produces better roads at least expenditure, and might increase the cost of the interstate system. Officers of the American Association of State Highway Officials and of state highway departments took the same position in statements presented to the subcommittee. The Senators themselves, except for Chairman Gore, were of like mind on this point.

• **Two years favored**—Most of the subcommittee members leaned toward the two-year authorization. Senator Kuchel was outspokenly for it. And Congressman Fallon had said it was that or nothing for him and his committee—that he would not accept a one-year compromise. However, chances are the one year deal will be accepted rather than risk no authorization at all in the press of adjournment.

But Senator Case, a former Roads Subcommittee Chairman himself, was considering such a compromise.

There was no question that the full Public Works Committee would endorse the Fallon bill. In fact, it was a closed session of the full committee that broke the bottleneck on consideration of the House-passed measure. Chairman Dennis Chavez (D., N. Mex.) and other committee members, including especially those from the roads group, caused a reversal of Senator Gore's previous stand and reopening of the hearings to testimony from defenders of the cost estimates.

Federal and state highway officials turned out in force earlier in the week to answer GAO criticisms. They came to the hearings armed with facts to demonstrate two things:

• That the needs formula is the best and only workable method for obtaining uniform progress and simultaneous completion of the interstate system in all the states.

• That the state highway departments and BPR had acted with complete honesty and professional competence in preparing the cost estimates.

W. A. Bugge,
Washington State Highway Director
". . . The estimate in the State of Washington is both well prepared and a proper one."

J. W. Vickrey,
California Deputy Highway Engineer
"The standards adopted by the Secretary of Commerce were uniformly applied."

Thruway Bridge Surfaces Fail

The New York State Thruway Authority, faced with deterioration of the concrete wearing surfaces on its bridges, is currently undertaking the repair of some 80 to 90 of the 576 structures on this major highway. The repair bill this year will approximate $1 million.

According to Conrad Lang, chief engineer for the Thruway Authority, there are many known or assumed reasons for the pavement failure. To begin with, all the bridges on the Thruway have 7 to 9 in. thick structural decks, waterproofed with 2 to 4 ply membranes and overlain with a 4 in. thick portland cement concrete wearing surface.

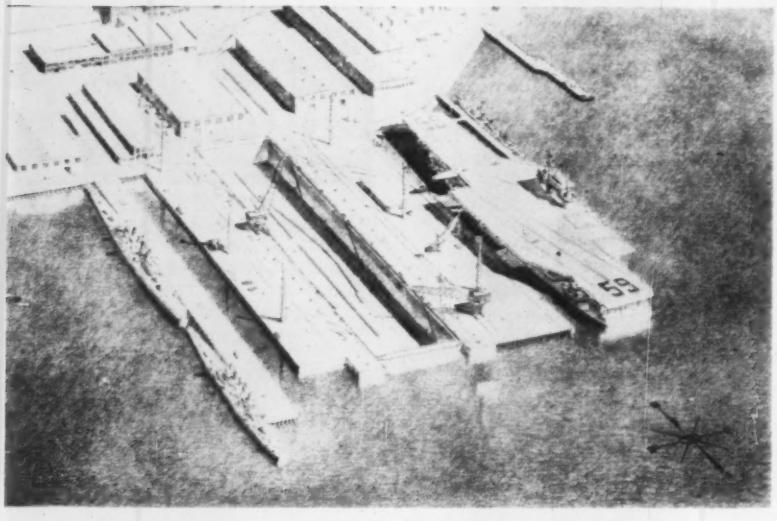
(In some cases the wearing course cement was air entrained, but according to Mr. Lang there has been no correlation found between air entrainment and resistance to deterioration.)

The possibility has also been mentioned that the fast construction schedule required in order to open the toll road promptly may have resulted in porous concrete. In any event, water got through the wearing surface to the structural deck in some cases and caused heaving of the upper slabs. Salt needed for removal of ice and snow also has caused concrete deterioration, according to Mr. Lang. The resulting irregular surfaces and uneven slabs have increased the pounding action of high-speed trucks, making the pavements more susceptible to further destruction.

The physical requirements of snow removal have been responsible for damage, too. To keep ahead of traffic, Thruway snowplows travel at speeds up to 40 mph and for complete removal they ride with their blades directly on the pavement. When a fast-moving plow hits a protrusion, spalling is appreciable.

Extent of the repairs will range from patching and oil coating existing concrete decks to the complete surface removal and replacement with bituminous concrete pavements.

Mr. Lang says the present maintenance work will end the surface deterioration problem on the Thruway bridges. He also says that in spite of the apparently large cost involved, the $1 million figure for repairs represents only ½ of 1% of the $200 million value placed on the Thruway's bridges or on the basis of the average age of the structures, ⅛ of 1% per year.



Drydock Will Be Record Size

Call for bids is expected by the end of this month for the world's largest drydock. It will measure 1,150 ft long and 188 ft wide. The top of the floor slab will be 53 ft below mean high water and 61 ft below yard grade.

The $30 million facility, which includes a pier, will go in at the Puget Sound Naval Shipyard at Bremerton, Wash. It will be able to handle the largest naval vessels now built or proposed.

Engineers for the project—Moran, Proctor, Mueser & Rutledge of New York City and Carey & Kramer of Seattle—have designed a relieved-type structure with thin concrete walls cantilevered from the concrete floor slab.

A. C. Neff, Recent NSPE President, Dies in Ohio

Allison C. Neff, 55, vice president and central division manager of Armco Drainage & Metal Products, Inc., died August 12 at his home in Middletown, Ohio.

Mr. Neff gained national prominence in engineering circles, serving as director of the National Society of Professional Engineers from 1948 to 1950 and president of that organization from 1955 to 1956. He also was a former president of the Ohio Society of Professional Engineers and the Cleveland Society of Professional Engineers.

A native of Cleveland, Mr. Neff received a bachelor of science degree in mechanical engineering from the Case Institute of Technology in 1925. He became assistant city engineer of East Cleveland, Ohio, after graduation. From 1929 to 1944, he was associated with the Ohio Corrugated Culvert Co. as sales engineer and Cleveland district manager. He joined Armco Drainage in 1944 as Ohio sales manager. He was named central division manager in late 1944 and vice president in 1945.

Mr. Neff was councilman and member of the City Planning Commission of Shaker Heights, Ohio, from 1944 to 1946. He served as vice president of the Ohio Highway and Turnpike Association from 1948 to 1952.

In 1952, he was elected president of the City Planning Commission of Middletown and held that position until 1957.

Plans for Bay Crossing Are Approved by Corps

The Corps of Engineers has approved plans by the Chesapeake Bay Ferry Commission for its 17.6 mile bridge-tunnel crossing of the mouth of Chesapeake Bay.

Plans call for two tunnels and a connecting trestle structure to tie Virginia's eastern shore with the Norfolk-Portsmouth area. The longer tunnel, under the Thimble Shoal channel on the south side, is to be 6,200 ft long. The other, under York Spit channel on the north side, will be 5,665 ft. The latter replaces a proposed high level bridge that was opposed and dropped.

Because of the soft bay bottom, the tunnels will be built by prefabricating tube sections and sinking them into prepared trenches.

Four firms are joining to build the facility (ENR July 3, p. 27). The ferry commission is planning a $190 million bond issue in October. Construction cost for the crossing is estimated at from $137 to $144 million, and $20 million is needed to retire a bond issue on a ferry system the new unit will replace

Carquinez Bridge Approach Leaps From Big Cut

Paving has started on the south approach to Carquinez Bridge, a job that called for the biggest single earthmoving operation in highway history (ENR Oct. 4, 1956, p. 36). Some 9.7 million cu yd of earth were removed from this single cut. Earthmoving was part of a $7 million contract for 3 miles of California freeway, U. S. 40. The contract was held by the joint venture: Ferry Bros., John M. Ferry, Peter L. Ferry & Son and L. A. and R. S. Crow, all of Glendale, Calif. Work is expected to be finished ahead of a December 31 deadline. The contract required completion in 570 working days.

In the foreground of the picture above are elevated viaducts that form an interchange, part of the bridge approach. Peter Kiewit Sons Co. is building this $4.6 million interchange. Supported by reinforced concrete piers on steel pile foundations, the welded plate girder structure has a reinforced concrete deck. In all, some $30 million worth of contracts are involved in Carquinez Bridge and approaches. The bridge parallels an existing bridge across Carquinez Straits, an arm of San Francisco Bay.

Vending Machine Sells Water

A nickel in the slot of a converted parking meter in Dallas buys 100 gallons of water, delivered at the curb through a hose supported by a swinging crane.

The service is "mainly for persons who have to haul water when their wells go dry," says City Water Superintendent Henry J. Graeser. He okayed the installation in response to a number of requests and indicated that other vending machines would be put in if there is a demand.

Water department mechanics made the machine from an old parking meter and a motor-operated valve.

Reports Filed on Panama Canal

Short range and long range solutions to the problem of increasing the capacity of the Panama Canal are being sought in investigations currently under way.

To a considerable extent one short range solution already has been decided on since work has begun on widening the canal in spots and putting in more lights, following Congressional approval of a $19 million expenditure recommended by the President in this year's budget. Financed out of the earnings of the government-owned Panama Canal Co., the work is expected to make the canal capable of handling the expected traffic increase for 15 years.

For the longer range solution, other studies are being carried out. The House Merchant Marine Committee has appointed a seven-man consulting board to make one of them, while the Panama Canal Co. has assigned separate studies to the New York consulting firms of Parsons, Brinckerhoff, Hall & Macdonald and Gibbs & Hill, Inc.

The Merchant Marine Committee's board, under the chairmanship of Dean S. C. Hollister of Cornell University, already has filed an interim report dealing with the short term aspects, and is now starting work on the long term—50 years or more ahead. A report on this aspect of the canal improvement is not expected for a year or two.

The task of Parsons, Brinckerhoff, Hall & Macdonald for the Panama Canal Co. is to update the 1947 Isthmian Canal Study, which resulted in recommendations for constructing a sea level canal on roughly the same alignment as the present lock canal. This study will involve, among other things, revising estimates of how much it would cost now to carry out the 1947 recommendations. A report will be rendered in about six months.

Gibbs & Hill, Inc., just last week presented its report to the Panama Canal Co., advising on traffic control systems that would increase measurably capacity of the present canal.

James Forgie Dies at 90; Was Noted Tunnel Engineer

Subaqueous tunnel design and construction practice in the United States stemmed directly from the pioneer work of James Forgie, Scottish-born engineer, who died in New York City last week, at the age of 90.

Having gained experience on the London Underground's tunnels under the Thames before the turn of the century, Mr. Forgie was brought to New York in 1902 by the Pennsylvania Railroad to advise on design and construction of tunnels the company was planning under the East and Hudson Rivers. When these were completed in 1910, they became the models for subsequent shield-driven tunnels in this country.

Mr. Forgie next became a partner in the consulting firm of Jacobs & Davies, which was handling work on the Hudson and Manhattan Railway tubes. Then he began a consulting practice of his own in 1914, which he continued actively until a few years ago. Among his clients were the Port of New York Authority, Pennsylvania Railroad, Mexican Light and Power Co. and many other utilities. His last major work was for the Pennsylvania Railroad on its tunnel under the city of Baltimore.

In London, after his graduation from Gordon's College, Aberdeen, Mr. Forgie was successively associated with such outstanding consulting firms as Sir Benjamin Baker & Co. and Sir Basil Mott and Hay. A member of both the American Society of Civil Engineers and the British Institution of Civil Engineers, he was awarded the latter society's Telford Gold Medal, given for distinguished service to civil engineering. Mr. Forgie was the author of many engineering articles, which added measurably to engineering literature. He was also expert witness and an arbitrator in many cases of litigation relating to tunnels.

Charles B. Breed Dies; Was M.I.T. Professor

Charles B. Breed, 82, one of the country's best known professors of civil engineering and a consultant of note, died August 11 in Camden, Maine. His entire teaching career was spent at Massachusetts Institute of Technology, where he was professor of railroad and highway transportation from 1906 to 1935, and head of the civil engineering department from 1935 to 1945.

Professor Breed also was widely known as an author. His "Principles and Practice of Surveying," first written with Prof. George L. Hosmer in 1906,

(Continued on page 32)

In Minnesota

the Interstate Highway Program is moving right along

With 29.1 miles of 4-lane divided highways including 38 bridges at present under contract, Minnesota's program of 896 miles of Interstate-Defense Highways is steadily progressing.

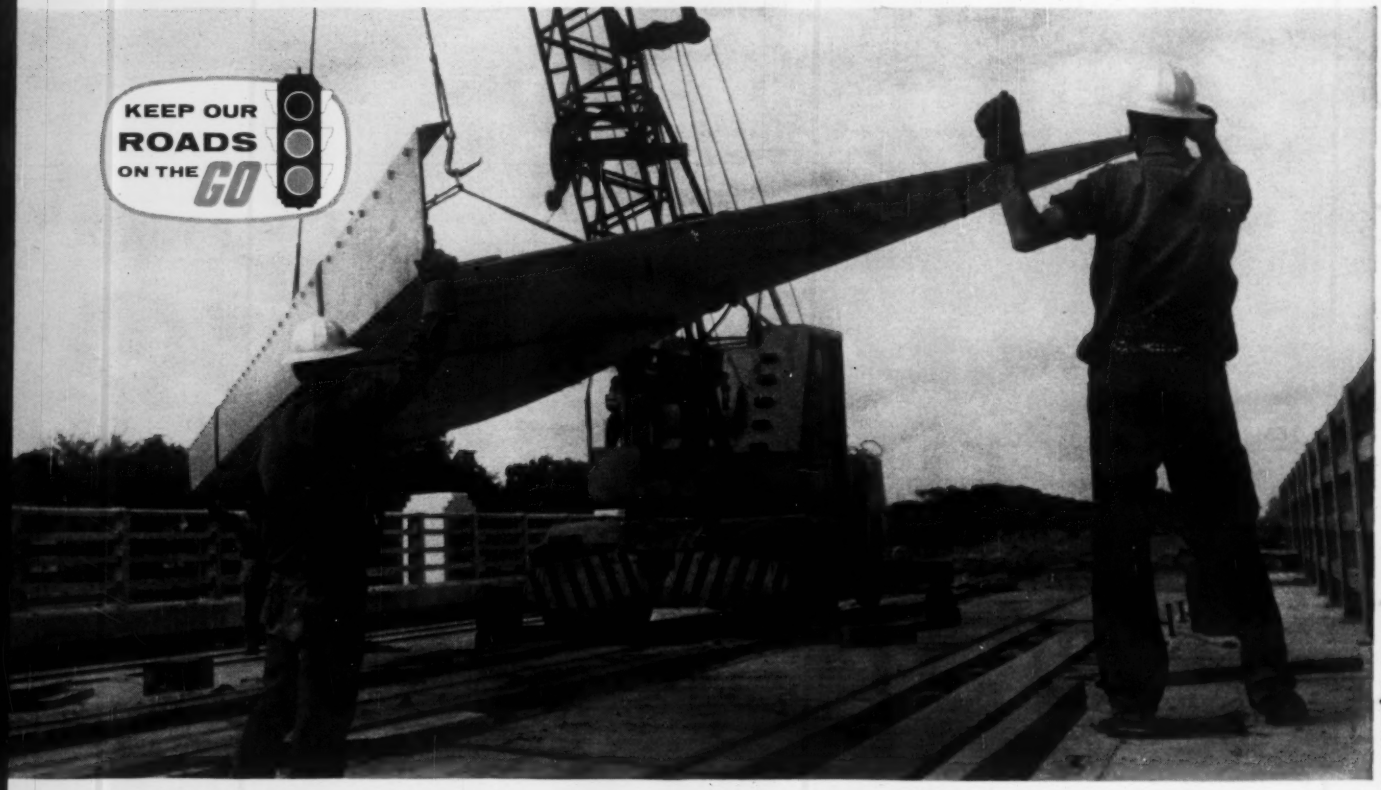
Already well ahead of the national average of Interstate Highways under contract, Minnesota expects to have road and bridge projects totalling over $164 million under contract by 1960. These jobs will include 198 miles of Interstate Highway and 206 bridges. The program is under the direction of L. P. Zimmerman, Commissioner of Highways, and J. H. Swanberg, Chief Engineer.

How products of United States Steel

Minnesota's $728-million Interstate program includes the following routes: Interstate Route 390, a relocation of U. S. Highway 61, from Duluth approximately 150 miles southwest to St. Paul—Minneapolis, and from there 100 miles south to the Iowa border—relocation of U. S. 65 and U. S. 69.

Interstate Route 392, running 240 miles northwest from St. Paul—Minneapolis to the North Dakota border—relocation of U. S. 52.

Interstate Route 391, relocation of U. S. 16, which will run approximately 330 miles east-west across the state from Wisconsin to South Dakota. An estimated 247,500 tons of steel and more than a million barrels of cement will be required for this construction.



Steel speeds up construction on Interstate 391. This year alone, Minnesota will require some 11,000 tons of steel for structural purposes, along with 6,000 tons for concrete reinforcement. Bridges of any size and type can be built lighter, stronger and more durable—and at lower cost—with USS *Tri-Ten* Steel and with our other USS High Strength Steels, USS *Cor-Ten* and USS *Man-Ten*, as well as with USS "*T-1*" Constructional Alloy Steel. USS *AmBridge I-Beam-Lok* Flooring, open or concrete filled, can be used to keep weight and maintenance to a minimum. USS *American Super-Tens* Stress Relieved Strand and Wire are also available. Sturdy bridge railing of USS Special Steel Sections will ensure the utmost in safety and long life.

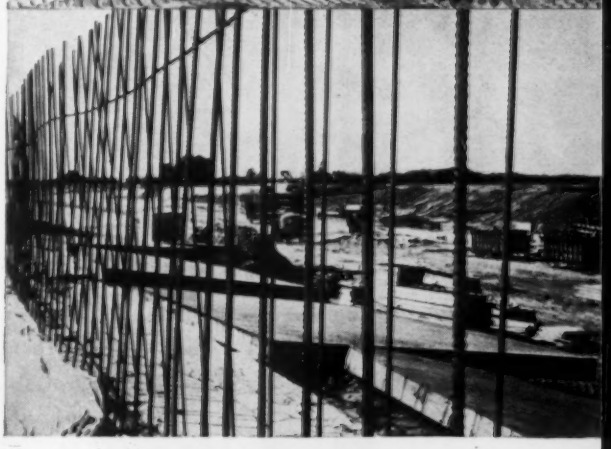
keep Minnesota's expressways on the go!

Pier foundation on Minnesota River Crossing, Interstate 390. Here, as in the six other bridges on this relocation of U. S. Route 65, steel expedites the foundation work and ensures permanence of construction. For cofferdam construction, USS Steel Sheet Piling provides easy installation of strong earth and watertight excavations. In pier and abutment foundations, USS H-Beam Bearing Piles provide a range of sizes accommodating all desired design loads with rugged, compact shape capable of being driven through difficult soils to desired penetrations. Both are finished products ready for use as shipped; installation is practically independent of weather conditions.

Preparing subgrade on Interstate 391. 1,300,000 cu. yds. of earth have already been moved on this construction which will be completed by August 1959. To meet the time and cost limits set for the Interstate Highway program, the fast-moving, big-capacity equipment used on the job requires the utmost in strength and durability. Shovels, scrapers, dozers and trucks can work at top efficiency, day after day, with the least time out for maintenance and repairs when vital parts that bear the brunt of high-speed operation are built with USS High Strength Steels or USS "*T-1*" Constructional Alloy Steel.

More than a million pounds of steel and 6,000 cu. yds. of air-entraining concrete will be used in the bridges and overpasses on Interstate Route 390. When used for such structures and for paving, *Atlas Duraplastic*, an air-entraining portland cement, provides a concrete mix that is extremely workable, more plastic and more cohesive. Fortified against freezing-thawing weather, it places, spreads and finishes easily. Reinforcement with USS *Di-Lok* Bars that feature a continuous diamond-locking deformation assures positive anchorage, reduces cracking to a minimum and makes shorter splicing possible. There is no better way to obtain concrete construction that combines permanence with low cost.

In concrete roadways, reinforcement with *American* Welded Wire Fabric makes it possible to construct concrete slabs 50 to 100 feet long with 30% greater strength and provides a longer-lasting, smoother-riding pavement.



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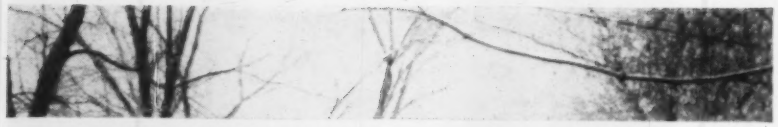
Get your free copy of this informative catalog. Here are 54 pages packed with practical products that will help you cut costs and speed up operation in every phase of highway construction. It lists all the products and the many services available through United States Steel. Just write to United States Steel Corporation, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.



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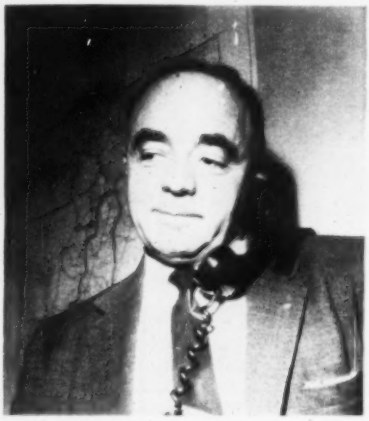
and revised over the succeeding years, was a standard engineering text book, familiar to many generations of students. In 1911 he was associate editor of the American Civil Engineers Handbook, and in 1913 of the American Mining Engineers Handbook. His last book, "Surveying," was published in 1942.

A graduate of M.I.T. in 1897, Professor Breed worked for the city of Lynn, Mass., in the engineering department for several years before turning to teaching. He began accepting consulting assignments early in his career, and soon became known as an expert on transportation economics. Much of his work was for state public utility commissions, and for cities and railroads on grade crossing elimination questions. He continued his consulting business until 1950.

Professor Breed was a director of the American Society of Civil Engineers and had been president of the Boston Society of Civil Engineers.



Washington calling . . .

Ellis Armstrong Named New BPR Commissioner

The new U. S. Commissioner of Public Roads is Ellis L. Armstrong of Salt Lake City, who is giving up a job as director of highways in Utah to become the government's number two man for federal highways (as predicted by ENR, Aug. 7, p. 17). As commissioner, he will be the top aide to Bertram D. Tallamy, federal highway administrator.

Mr. Armstrong, 44, was a 20-year man with the Bureau of Reclamation when he went with Uhl, Hall & Rich on the St. Lawrence Power Project in 1953.

Last year he was picked to direct the state roads commission in his home state of Utah.

Mr. Armstrong's appointment as commissioner will not require Senate approval. He succeeds C. D. Curtiss, who retired.

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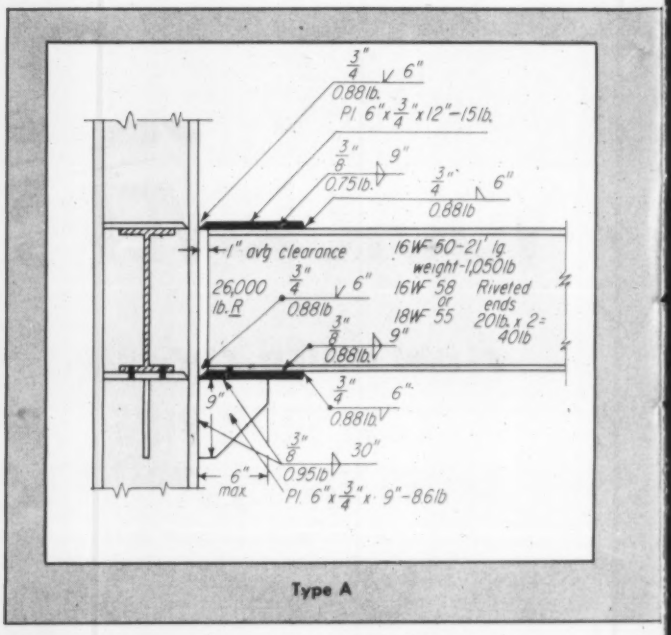


Type A

Here's a guide to better welded steel building frames . . .

DON'T weld girders to columns with bracket seats and heavy top and bottom plates.

How to Get Better, Less Costly

Van Rensselaer P. Saxe
Consulting Engineer
Baltimore, Md.

You can save steel, and money as well, on welded structural framing of multistory buildings if you use the right connections. There are many types of connections that are structurally adequate to choose from, but the best ones require less material and have low fabrication and erection costs. In deciding which to pick, you should be guided by principles established after long experience with welded construction:

- Start with the idea that a welded structure has an individuality of its own and should be so treated.
- If there is any purpose in using welding as a connection method, then it should be done as an improvement over older methods and not as an attempt to copy these methods. The older methods, in general, are not economically adaptable for welding.
- Don't strive for a degree of accuracy of fabrication that is literally unattainable with current techniques of rolling and fabricating structural steel. Adapt welding designs to existing mill tolerances and you will get better welded structures, at considerably less cost than now quoted for welded work.
- A little extra weld material applied here and there is not nearly so expensive as the shop and field work necessary to secure perfect fit in connections.

To illustrate the application of these principles, I will analyze the two welded connections labeled Type A and Type B, shown above. (These are similar to the two connections published in ENR Jan. 2, p. 12, with an inquiry as to which is better). I believe that I can demonstrate that a superior connection, Type A-B, also shown above, can be obtained by combining the best features of A and B.

Why A Is Unsatisfactory

It permits excessive sway. There are not enough temporary field bolts in this connection to prevent serious sway of even a well guyed structure during erection. There should be at least two bolts in both flanges. But even if there were, movement of the bolt shafts in the holes would permit frame distortion due to welding. Use of high-tensile bolts, however, would create sufficient friction between steel parts to prevent this slippage.

The girder is too big. The larger size is necessary because holes in the flanges or connecting plates reduce the area available for resisting tension. You should choose a connection that does not require holes for temporary field bolts.

Fabrication is difficult. It is hard to set the top plate on the beam with outstanding edges square and vertically over the corresponding edges of the bottom plate, which is shop welded to the column. But what if you pay the high cost of getting this shop work done, and then during erection find the columns are bent, out-of-square and under or over-size (though perhaps each defect is within allowable tolerance)? Now you either must cut the top plate to fit or field weld to fill a gap.

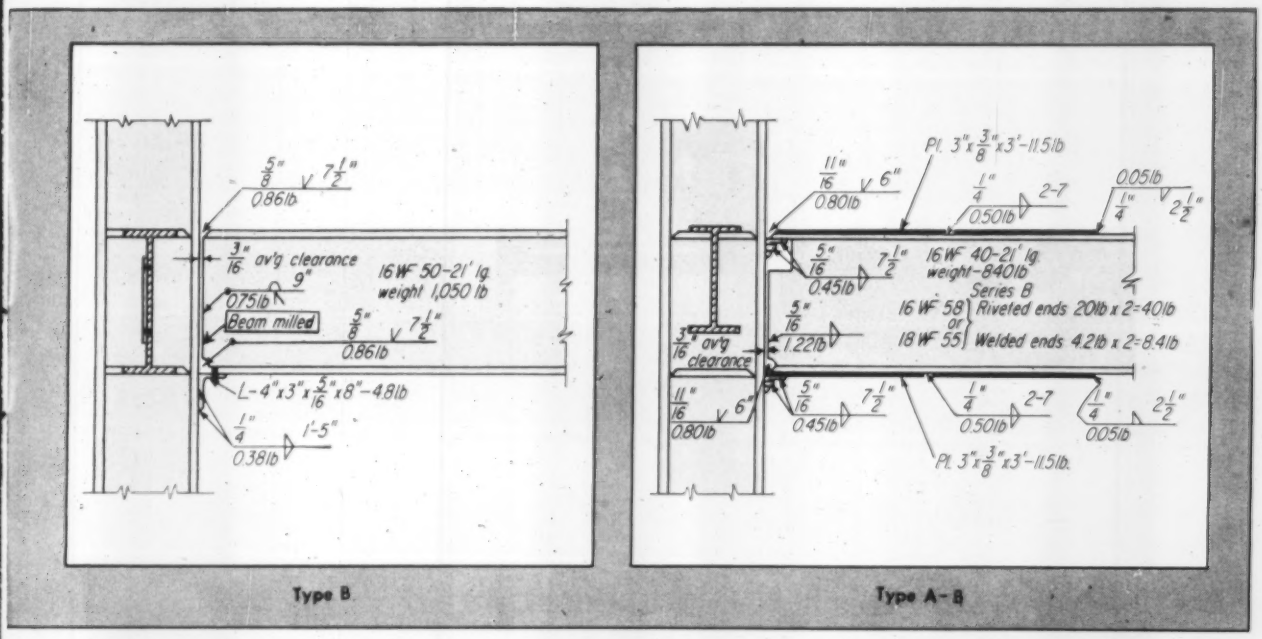
Projections are bad. Where the plates stick out beyond the flange, they are subjected to handling damage. Furthermore, they should not be as wide as the flange. As the plates increase in width, they are more apt to bind at their edges against the column flanges.

Type A wastes material. The seat bracket takes more steel than necessary and often produces severe eccentricity in the column. In addition, excessive welding is required. And where a beam frames into the column web, the seat is likely to interfere with the horizontal stiffening plates between column flanges.

Why B Shouldn't Be Used

Safety is questionable. Type B has no connecting bolts at top-flange level. It is almost impossible to erect the structure safely and maintain plumbness during the welding operation.

Milling is necessary. And it costs $10 to $30 to mill a beam or column end to "exact length." But what is exact beam length? Certainly, in view of tolerances allowed for rolled shapes (see, for example, the AISC MANUAL OF



DON'T mill the girder ends when you omit the top and bottom plates.

TRY the connection above, which combines the best features of Types A and B but costs less.

Welded Connections

STEEL CONSTRUCTION), it can't be the theoretical distance between the faces of theoretical columns. So a beam milled to exact length may turn out to be too long or too short, or it may run into trouble from an out-of-square column flange.

It is impossible to straighten out kinks in the heavier columns in the field with normal erecting equipment. But even if you could, you would need much more than temporary field bolts to hold them.

Why not learn from riveting experience and order all beam lengths plus or minus ⅛ in. and use fillet welds for web connections? Field shortening of occasional overly long beams is much cheaper than milling every end.

Why A-B Is Cheapest

It permits smaller beams. For example, for a 21 ft span a 16 WF 40 could be used instead of a 16 WF 50. This 20% saving in weight could add up to a substantial sum if duplicated for all the beams in a multistory building.

The smaller size beam is made possible by use of longer, but narrower and thinner connection plates on the flanges than used for Type A. These plates assist the flanges in resisting negative bending moment at the beam ends. Thus, the beam need be sized only for the moment at midspan, which is smaller than at the ends.

Type A-B connection is lighter. Not only is less steel required for the thinner, narrower connection plates, but the bracket used in Type A is eliminated. This omission is made possible by the welded web connection, similar to that employed in Type B. For Type A-B, however, the web is not milled.

Erection is simple. Prior to welding, the beams are supported on the columns with welded clips at top and bottom, eliminating bolt holes. With these clips, local bending within allowable tolerance can be ignored, minimizing a

How the Connection Weights Compare

Type	Welds—Lb Shop	Welds—Lb Field	Connecting Steel, Seats, Plates, Bolts, Etc.—Lb		Beam—Lb		Beam and Connections—Lb	Comment
A	3.53	2.51	2Pl- 6x3/4x12 Pl-18x9/16x9 Plus 2 bolts	30.0 10.2 40.2	16 WF 50	1,050	1130.4	Beam must be hole punched for bolts and ordered to approximate length, then plates placed at nearly exact finished dimension between columns.
B	0.38	2.47	4x3x5/16 Angle 8 in. lg	4.8	16 WF 50	1,050	1059.6	Beam must be hole punched and ordered ⅞ in. longer, as required for milling. This extension is wasted material, and in addition, there is a milling cost of at least $15 per beam.
A-B	1.50	2.20	Clips & seats 2Pl-3x3/8x36	1.5 23.0	16 WF 40	840	889.0	Beams are ordered ±⅜ in. Flame-cut the web under the bottom of the top flange. No punching.

ON ASPHALT—These pictures show the Barco Vibra-Tamp working on asphalt surfacing at an Arizona motel. It moves along, self-propelled, at a uniform rate with minimum effort required of operator.

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. . . Better connections

WELDING is less costly when tolerances are the same as for riveting.

serious source of field difficulty in erection. You can use the over-all length of the columns to secure good plumbing.

Less welding is needed. The long, thin plates require less shop welding than the connection plates used in Type A. Weights of material for the three types of connections are summarized in an accompanying table.

• **Other helpful hints**—Where there are intermediate floor beams between girders, you will find it advantageous to set the top flanges of the beams about 1 in. above the girder top flange. There will be less connection interference at columns and girders. And you will be able to develop continuity with direct, butt-welded connections over the top.

For high, wind-braced buildings, you can vary the size of the Type A-B end plates to suit changing wind-stress requirements. This will enable you to keep changes in beam size throughout the height of the building to a minimum.

Every industry has its working rules, and building construction is no exception. So when we adapt our welded designs to existing tolerance rules rather than try to change them, we get more workable welded structures and at considerably less cost. Since I decided that my welded work would be done under the same tolerances allowed for riveted or high-tensile bolt work, my structures have been built faster and prices are better.

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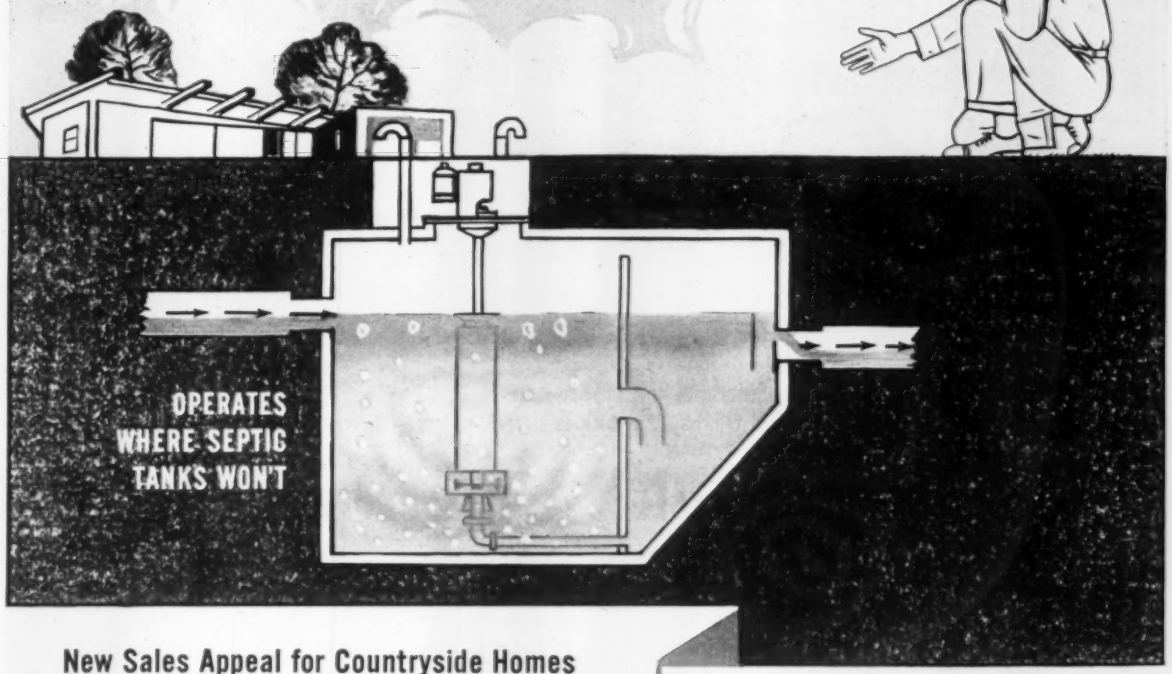
It's the single-home, aeration-type sewage treatment system. It meets minimum FHA property standards. It meets all criteria of N.R.C. Report No. 586 (for U.S. Public Health Service)



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The Cavitette is more than just an answer to "septic tanks not approved here." It also gives the builder something new with which to sell. For example, he can tell prospective buyers about such advantages as: no objectionable odors; no tank cleaning; handles all home appliances; operates on same principle (aeration) as city sewage treatment plants. In fact, the home buyer will recognize the Cavitette to be the final step in complete modernization of countryside living.

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Cavitette dealers and distributors are being set up throughout the country. But, if you have no outlet nearby at present, we will be happy to supply any information you need. In the meantime, consult your controlling health authorities for local requirements.

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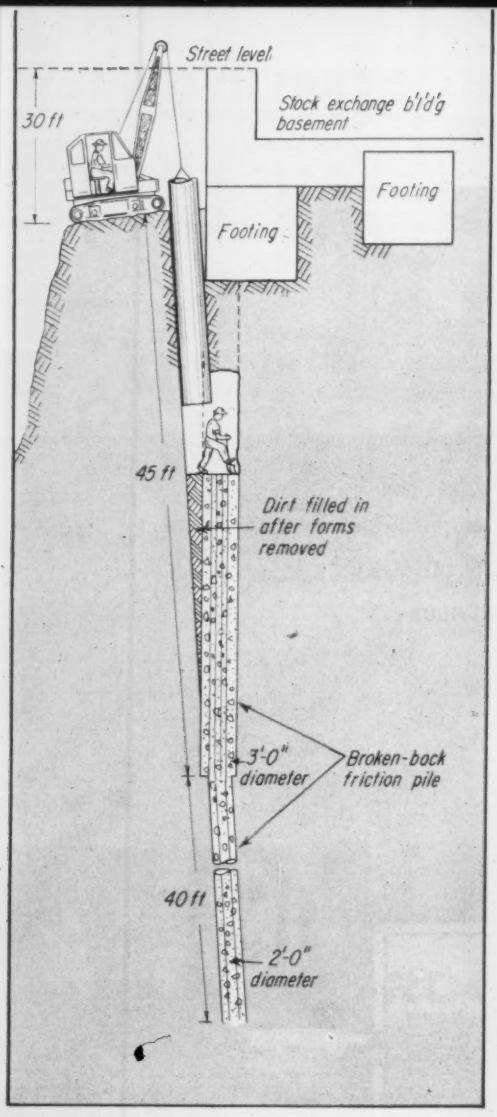


PILES have slant drilled base, hand excavated top.

WORK IS DONE on ledge (arrow) next to an existing building for the new

"Broken-Back" Friction Piles Will

Deep excavation for the new 18 story California Bank Building in Los Angeles has led to unusual underpinning protection for a heavy structure next door. "Broken-back" friction piles 80 to 90 ft deep are being used to support the L. A. Stock Exchange Building.

The term broken-back is used because the underpinning members are bent about mid-point. The bottom half is a reinforced concrete filled, slant-drilled, 2 ft dia pile. Top half is a 3 ft dia vertical extension that is largely hand excavated.

It would have been impractical to carry the new foundations down to bedrock. So the underpinning takes the form of friction piles, rather than that of end bearing caissons.

Slant drilling for underpinning has been used in other areas, but is new to Los Angeles construction. More of it undoubtedly will be used in the future as building heights in the city increase. The California Bank Building is the first commercial building built higher than the old height limit since that restriction was repealed in 1956.

The new building will rise 267 ft, with 18 floors. The old limit was 150 ft or 13 floors. The first three floors will fill the entire 155x160 ft lot. Above the third floor there will be a step-back to the tower shaft.

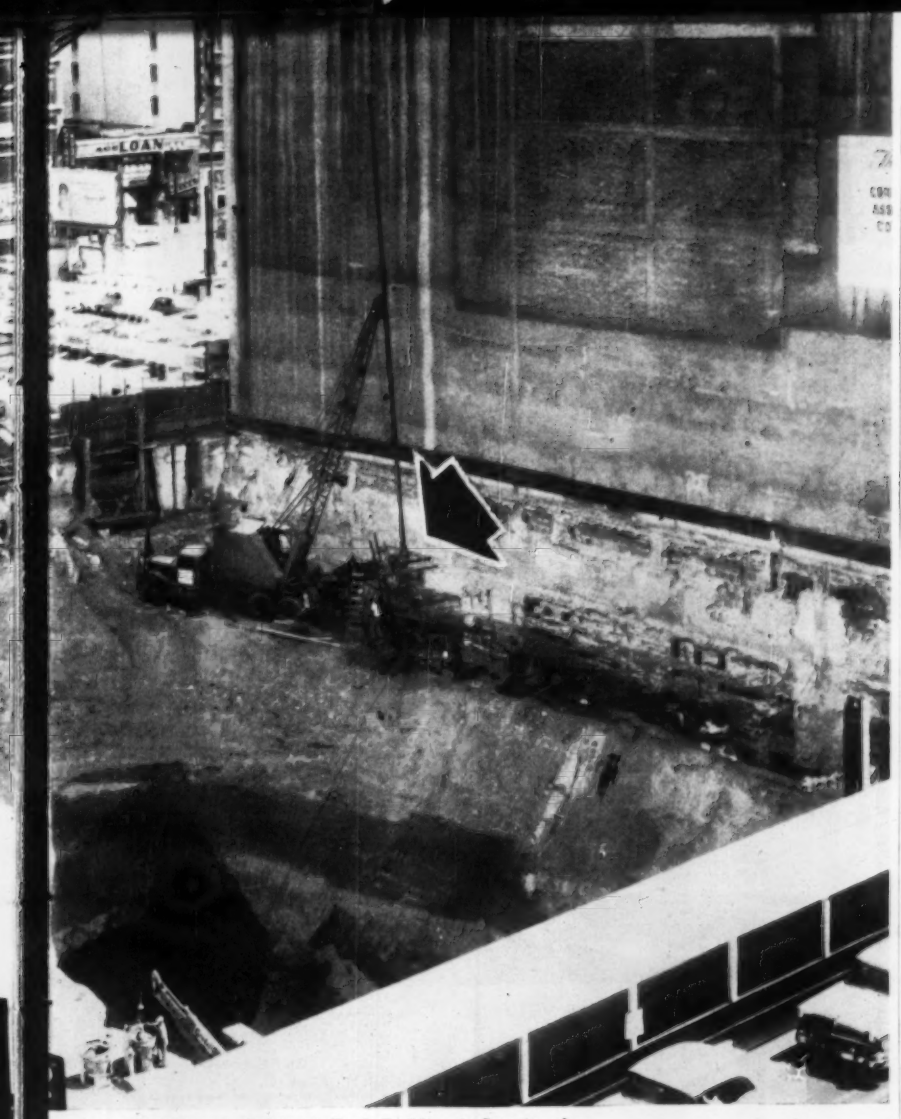
Below street level there will be four basements, three parking (250 cars), the fourth for a bank vault. The fourth basement is 61 ft below street level.

• **Slant drilled hole**—First step in the construction was excavation of the site, leaving a ledge adjacent to the Stock Exchange Building. The ledge is about 12 ft wide and some 30 ft below street level. For each of the 23 broken-back piles, a drill rig working on this ledge slant drills a hole 45 ft deep, using a 30 in. tool. A steel casing is driven to the full 45 ft depth. Then the hole is extended about 40 ft, using a 24 in. drill bit, the extension is filled with reinforced concrete.

As soon as the concrete has set, the steel casing is raised 6 ft and a construction worker is lowered into the shaft. He begins tunneling a 3 ft wide vertical shaft to a preselected footing of the Stock Exchange Building. The steel casing is low enough in the hole to surround the miner's head when he stands upright. This is to prevent suffocation in the event of a cave-in.

The hole is dug in 6 ft increments and kept true by use of a miner's transit and plumb line. After each 6 ft element is dug, reinforcing steel and concrete forms are placed and the concrete cast.

After the concrete sets the casing is raised another 6 ft. Forms are stripped



370,000 sq ft California Bank Building in Los Angeles.

Underpin Building

and the concrete is carefully backfilled. Then the procedure is repeated.

This work is continued until the concrete is 1 ft from the bottom of the particular footing selected. At this point, a short section of steel column is wedged between the top of the pile and the bottom of the footing. The building load is permanently transferred to the pile by jacking. So far there has been negligible settlement after the building load has been placed on the broken-back piles. Final encasement of the steel section will not be made until all 23 piles are in place and the pile settlement record is studied.

It takes an average of 2½ days' working two shifts, to complete the slant drilling of an individual hole. And it takes a week and a half for two shifts to complete the vertical part of the piles.

The soil is gravelly and tough to dig, with an occasional 12 in. boulder slowing the miner's process. This is an indication that slant forming the lower section of the friction pile is a real time and money saver.

While the underpinning work was being done, the central part of the site was excavated to full depth. This permitted casting the base slab and erection by Bethlehem Pacific Coast Steel Corp. of initial steel work in the building core. The core steel will be used for bracing the full width excavation.

The California Bank Building was designed by Claud Beelman & Associates, Los Angeles architects, with Brandow & Johnson as consulting structural engineers. General contractor is C. L. Peck. Subcontractor for excavation is Webb & White.

William Porush is handling the underpinning design for Webb & White, following a method suggested by the structural engineers.

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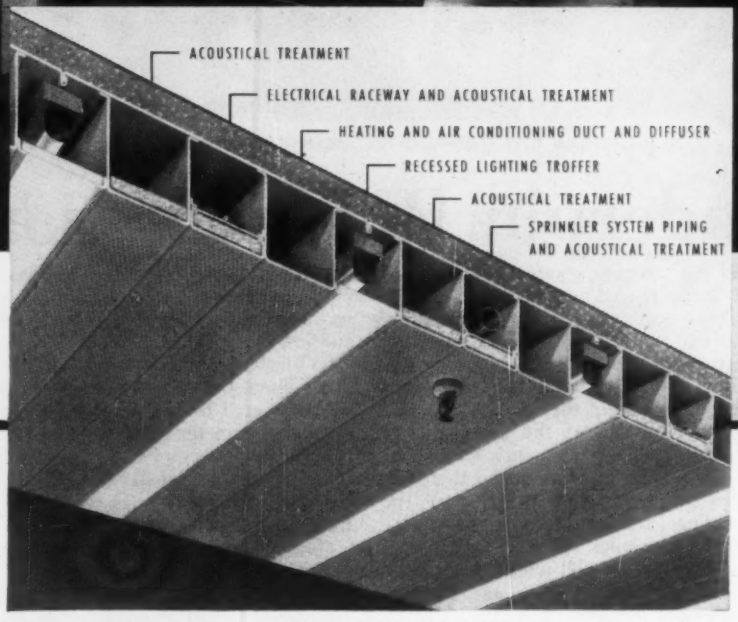
Mahon M-FLOOR Is Utilized

Above: Interior View of Office Building for Whirlpool Corporation, Clyde, Ohio. In this building the Heating and Air Conditioning Ducts and Diffusers, Recessed Lighting, Electrical Raceways, Acoustical Treatment, and Sprinkler System Piping are all contained in the Combined Structural Floor and Ceiling constructed with modified M-Floor Sections. See Detail at Right.



The Cross Section above shows a unique adaptation of M-Floor Construction to provide both the Structural Sub-Floor and Acoustical Ceiling. In this application, Cel-Beams and Channels between Cel-Beams in the M-Floor Sections are ingeniously utilized for several other functional purposes.

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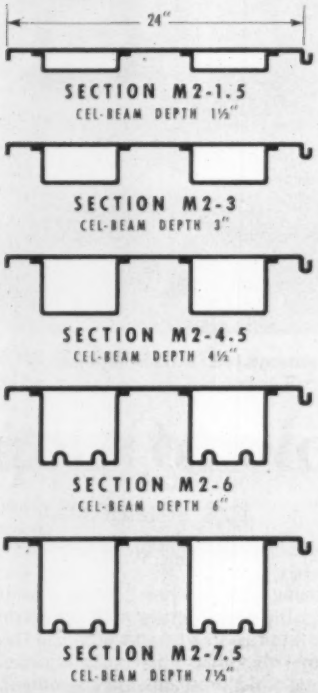
MAHON M-FLOOR SECTIONS



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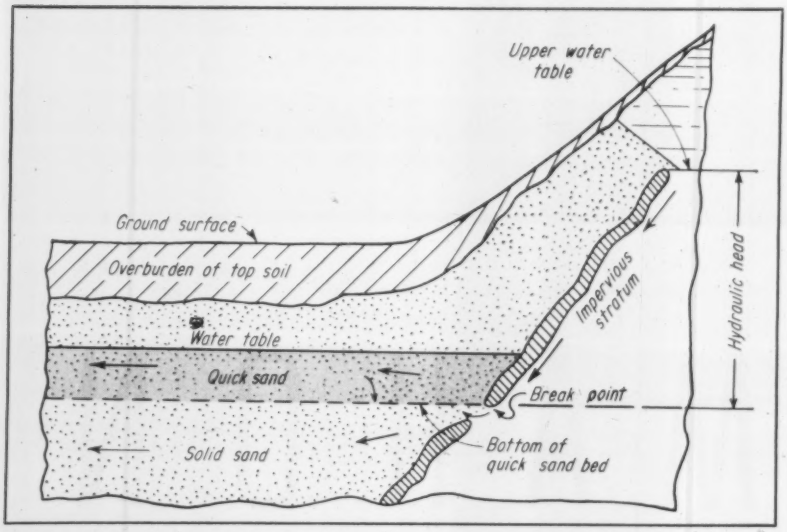
QUICKSAND DAMAGE: This pipe broke in the middle as a result of non-uniform bearing in quicksand bed. Solid clumps interspersed in quicksand became supports that caused beam action in pipe.

Pipelayer's Puzzle: How to Cope



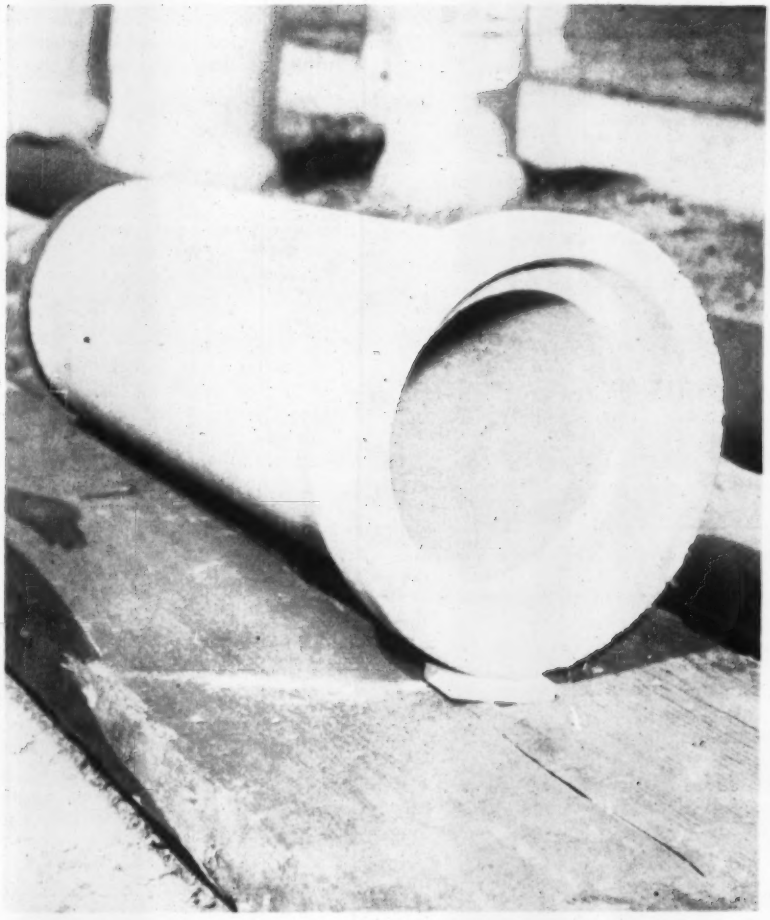
WHAT IT IS: True quicksand is a hydraulic condition caused by water under pressure, creating partial buoyancy of the sand particles.

C. S. Seabrook
City Engineer
Puyallup, Wash.

Laying a pipeline in quicksand brings the construction man up against more confusion and uncertainty than in any other phase of construction.

Quicksand problems are so comparatively rare that many engineers do not have sufficient background to cope with a quicksand emergency. And the few available texts on the subject generally discuss the problem in terms of Greek letters and formulae and are of very little use at such times.

• **What is quicksand?**—There are two general types of soil conditions popularly referred to as "quicksand." The first is the typical swamp or bog area where the solid material involved has about the same specific gravity as water. It therefore stays in suspension instead of settling to the bottom. The



HOW TO PREVENT IT: Inexpensive solution is floating timber cradle set on quicksand. Rubber pad under bell compresses under backfill, so pipe bears on fill under it.

with Quicksand

swamp is a fluid, and must be considered as such in construction operation.

True quicksand exhibits precisely the same behavior as the bog material, but for entirely different reasons. In true quicksand, the unstable condition occurs when a body of loose and permeable sand is submerged by ground water under pressure. This situation occurs when an underground stream flows from a higher elevation beneath an impervious stratum of some sort, and "seeks its own level" when a break in the stratum is reached. If this break occurs close to the ground surface, a simple spring results. If it is considerably below the surface, and if a mass of loose sand above absorbs and holds the water, the resulting material becomes typical quicksand.

The degree of fluidity possessed by the quicksand depends primarily on the pressure head of the underground stream. If the head is sufficient, bubbling sand boils occur. If not, the sand is at rest. In any case, hydraulic pressure in the form of an upward thrust exists and reacts on each particle of sand to partially counteract the pull of gravity, creating a degree of buoyancy. The sand does not move, but for all practical purposes it has lost part of its weight. It is in a state of semi-suspension, exactly as in the case of the bog material with the low specific gravity. Consequently, we again have a medium that behaves like a fluid and must be treated as such, even though we may be dealing with ordinary, coarse sand of high specific gravity.

• **Nature's laboratory**—A few skeptics still contend it is impossible for a pipeline to settle into a bed of sand unless that sand is first removed, through some process such as being drawn into the pipeline itself through a faulty joint. Such sinking can be demonstrated at any "bubbling spring" found in a quicksand area.

There is one spring like this on the outskirts of Puyallup, Wash. It bursts right out of a clean bench of dry sand and gravel. It has been completely boxed in by clay walls and equipped with a small spillway at one end. This little pond has clean sand on the bottom, a covering of about 4 in. of water, and at the center there are two or three little sand boils.

For three or four inches around the boils the sand is in constant motion. Beyond this point to the walls of the basin it appears perfectly quiescent.

If a small stone, say 1 in. dia, is placed on the submerged sand at the outer edge of the basin, considerable effort is required to press it down out of sight. Proceeding toward the center of the pond, less pressure is required to bury the stone. Finally, just a few inches from the inner edge of the quiescent sand, you can lay the stone down gently and watch it sink out of sight of its own weight in a matter of one or two seconds.

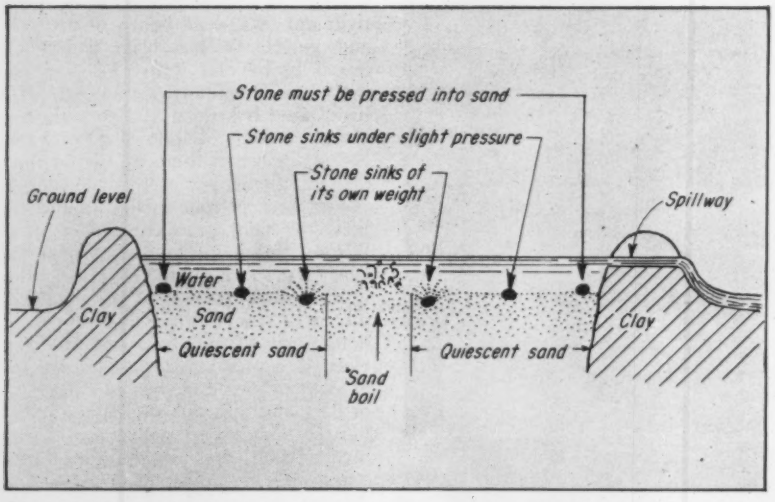
Had the stone been placed in one of the boils, you would expect such a result, for a boil is nothing but a column of water carrying a little sand with it. At the point where the stone disappears, however, there is no movement of the sand. After watching the phenomenon a few times, you begin to understand that the quiescent sand is actually in partial suspension. It also becomes evident that only the upward thrust of the hydraulic head operating at this point could create such a condition. This thrust counteracts part of the gravitational pull on the grains of sand by causing buoyancy. The sand grains are probably just barely touching each other, and the downward thrust of the stone readily pushes them to one side.

The gravitational pull on the stone isn't reduced to the same extent that it is on the grains of sand. The pull of gravity is proportional to the mass of the object upon which it is acting, while the pressure thrust is proportional to the surface affected. Since the increase is mass between the sand grain and the stone varies with the cube of the diameter, and since the increase in surface varies with the square of the diameter, the net effect, as the difference in size between the two increases, will be in favor of the gravitational pull. *This means that the greater the difference in size, the more readily the stone will sink through the sand.*

Whether the hydraulic pressure can create this state of sand suspension with absolutely no movement of water is a question for the theoreticians. In all probability there is an imperceptible movement of the water between the grains of sand.

• **Job failures**—On an actual job in-

. . . Quicksand: Soil analyses are of no help



'NATURE'S LABORATORY," a spring near author's home, is prop for demonstrating how pipe can sink in quicksand without removing the sand (as through a faulty joint).

volving quicksand, it is nearly impossible to predict what's next, either in point of time or linear feet. To further confuse the issue, the simple act of excavating a trench introduces another unknown by upsetting the balance of the hydraulic forces normally at work. The following incidents illustrate some of the hazards involved.

A trunk sewer constructed a year ago in a nearby city in Washington was completed in the dry season. It functioned perfectly for eight or nine months, then failed in numerous places when the wet season began.

Most of the observed failures were ordinary sinking and pulling apart of the joints. But in one area, surprisingly, several of the pipe sections broke neatly in two between the joints. This indicated beam failure resulting from nonuniform bearing. No explanation was apparent until we asked the salvage contractor to stop the wellpoint pumps briefly so that we might observe natural hydraulic conditions in the bottom of the trench. A few minutes after the pumps were stopped, rising water divulged a strange pattern of small islands of hard solid material that could be walked on, surrounded by material that was little better than muddy water—a pattern that readily explained the beam failures.

A 48 in. line constructed 10 years ago in Tacoma provides an excellent example of how excavating a trench can induce quicksand. The line was bedded on pure sand at a depth of 30 ft. Test holes indicated the water table was 15 ft from the surface or 15 ft above the bottom of the trench. There was no known quicksand in the area. But when the trench was excavated, the sand in the bottom boiled violently. Anyone attempting to stand in it would have sunk out of sight.

We concluded this was an artificial situation caused by the 15 ft head of water acting on the trench bottom. We reasoned that when the trench was backfilled and the ground water rose to its normal height, the quicksand condition would disappear. An 18 in. bed of screened gravel of 3 in. diameter was laid in the trench bottom. This supported the pipe long enough to complete the pipelaying and backfilling. It should be noted that bank run gravel, because of its inability to bridge, would have been useless. Even the screened gravel would have served no purpose had this been a natural quicksand condition.

A temporary, or artificial, condition as found in Tacoma is quite unusual. Anyone confronted with such a situation should avoid the assumption that the condition is only temporary.

An even more dangerous procedure is to assume that when several feet of dry or non-sandy overburden covers a sand bed, there can be no quicksand below, except as induced by the excavation of the trench.

Recently in Puyallup, we were digging up an old sewer that had gone to pieces in a very active quicksand area. The area to be excavated was ringed with wellpoints on 2 ft centers. The points were jetted down through 10 ft of non-sandy overburden. At that point, without warning, they started sinking of their own weight and had to be supported to avoid loosing them. This was indisputable evidence of a highly fluid material beneath a non-sandy overburden.

• **Construction procedures**—There is nothing in the way of standard procedures for quicksand construction that I know of. Pile-supported cradles, of course, have always been the final word when large trunk line had to be constructed through unstable material.

The present concern, however, is with routine pipelines of all sizes that must be constructed in every community, quicksand or no quicksand. Normally there is very little choice in location and as a rule, the agency involved cannot afford the extremely high price of standard pile construction.

• **Underdrains in the form of perforated pipe cannot be recommended,** although they are often proposed and sometimes used beneath pipe to be laid in quicksand. The underdrain is supposed to lower the water table along the pipeline to render the base material more stable. However, you never know for sure whether the underdrain is functioning properly or how long it will continue to do so. If the perforations are too small the underdrain will become plugged; if they are too large sand will be lost into the line with disastrous results. Finally, there is always the problem of supporting the underdrain itself. In view of these consideration, the use of underdrains cannot be recommended except under very specialized circumstances.

• **Cement stabilization of native bedding material does not appear to have much practical value.** And I have never heard of it being tried. Under certain conditions, this injection of cement might prove effective, but basically if the quicksand can't support the pipe, it is difficult to understand how it could support a mass of near-concrete. It would likewise be almost impossible to determine ahead of time just how much cement to use or where to inject it.

(*Story continued on page 46*)

Old Hand with Quicksand

C. S. Seabrook has been constructing sewers and other drainage structures most of his professional life. A 1917 graduate of the University of Michigan, the native Ohioan migrated to the West Coast and has stayed there ever since. He worked in various municipal engineering posts in California for 20 years and then served a stint with the Army Corps of Engineers.

From 1944 to 1956 he was sewer and drainage engineer for Tacoma, Wash., until he assumed his present post as director of public works for the City of Puyallup. Pipelayer Seabrook brings to this article his wealth of practical experience in coping with the often misunderstood phenomenon of quicksand.

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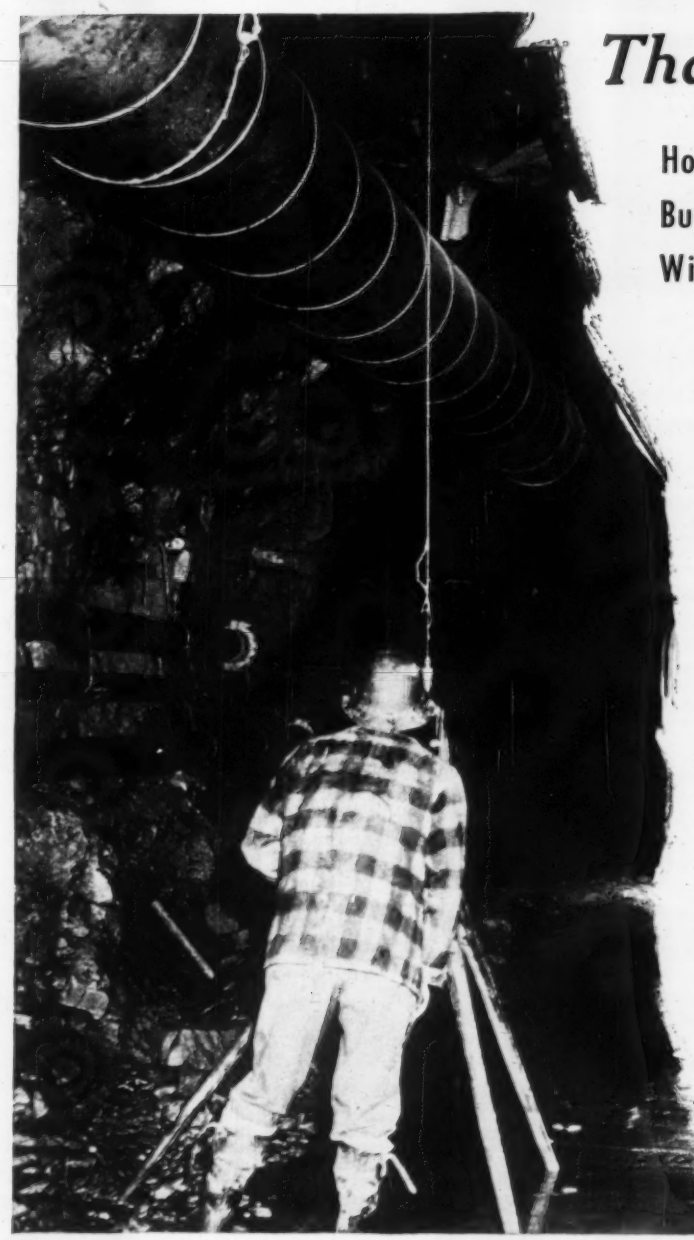

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. . . Quicksand: There's always solid bottom below it

SEATTLE'S "GLORY HOLE", last year's famous cave in above a 150 ft deep sewer, indicates that solid bottom below quicksand remains in stable condition all the time.

• **Floating timber cradles represent the best means of support in a quicksand area** other than a conventional pile-supported cradle. This form of construction consists of any type of timber cradle laid directly on the native soil. The cradle provides longitudinal rigidity to the line.

Last summer, the City of Puyallup used a floating cradle in the reconstruction of 2,000 ft of an old 10 in. sewer that was in imminent danger of failing. The particular area involved was bad quicksand, but not the worst in the region. We believe the floating cradle will serve the purpose for many years to come.

We used two 3x12 timbers with staggered longitudinal joints, all cleated firmly together on the underside to provide the greatest possible longitudinal rigidity. The accompanying photo of a pipe section resting on the cradle also illustrates an effective method of eliminating beam action of bell and spigot pipe, if the line is permitted to rest on the bells. A ½ in. thick gum rubber pad was placed directly beneath each bell. The pad was compressed when the trench was backfilled, transferring the load to the barrel of pipe and thence to the backfill material, which had been carefully packed beneath it. The type and thickness of rubber to use depends on the weight of the pipe.

• **Pile construction, as ordinarily practiced, can be substantially reduced in cost by modifying standard pile driving procedures and pile sizes.** Any pipeline load to be supported is relatively small. There appears to be no reason why something like 4x4 timbers can't be used instead of 12 in. piles. Such timbers could be driven with an air hammer or jetted into place, thus eliminating need of a pile driving rig.

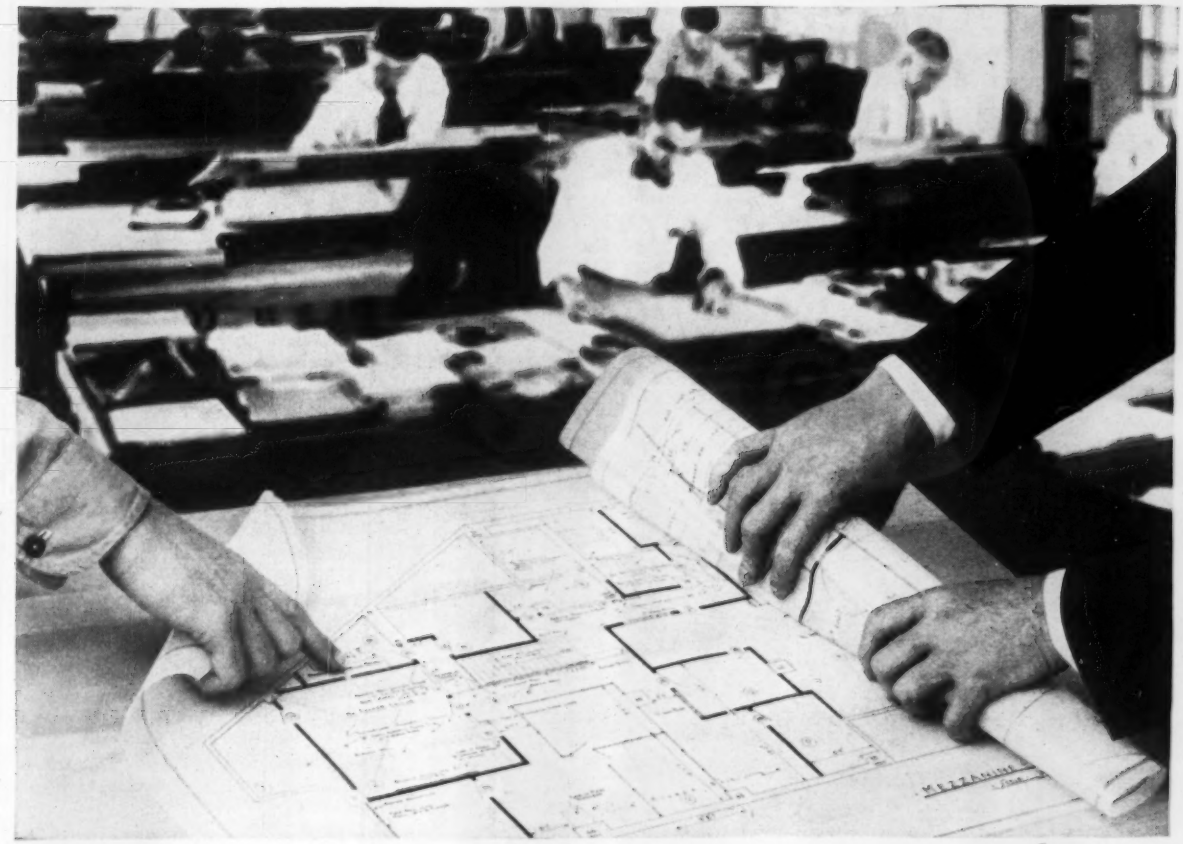
I have not attempted this type of construction yet, but the next critical sewer in Puyallup will be handled in this manner. Among other problems will be establishing a rating on air hammers so that pile bearing values can be determined on the job.

• **Pile driving questions**—Because of the tremendous variation in fluidity of quicksand beds, the great majority of piles should be driven into stable material, taking no account of skin-friction in the quicksand stratum. This poses two specific questions. First, what assurance have we of finding a solid bottom beneath a bed of quicksand? Second, if such a bottom is encountered, how do we know its fluidity won't change with the seasons, as is the case in the main body of quicksand?

From a theoretical standpoint, consider the basic cause of quicksand—groundwater under pressure moving beneath an impervious stratum to the first break in the stratum. Material below the break point is compressed by downward hydraulic thrust and therefore should be solid.

Thus, the break point in the impervious stratum determines the bottom of a quicksand bed. Since this point is a geological fixture, it follows that the solid ground below the break point will always remain in that condition. At exactly what elevation such a break point may be located can be determined only by actual physical investigation.

• **Seattle's "glory hole"**—This theory is borne out by the famous cave-in above a Seattle sewer last year (ENR Dec. 19, 1957, p.26). A 6 ft brick sewer was constructed 50 years ago in a tunnel 150 ft below street level. At least a part of the



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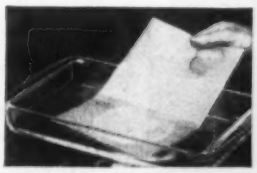

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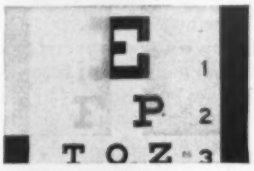

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. . . Pipelayer's enigma

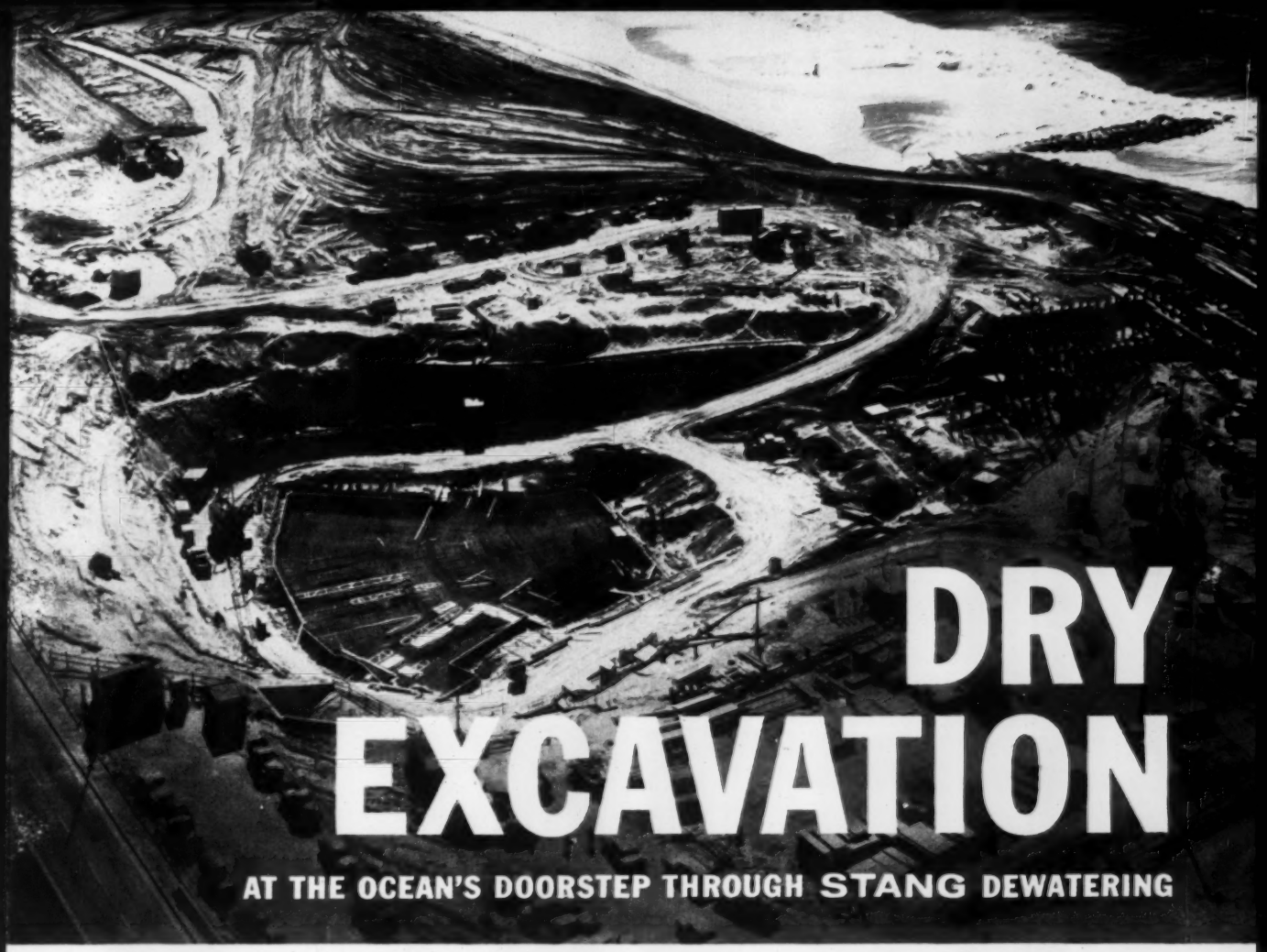
earth between sewer and street level is known to be quicksand. Last fall, without warning, the street above the sewer caved in, leaving a hole 120x200x60 ft deep. Investigation indicated there were several comparatively small leaks in the top of the sewer. These leaks, over a long period of years, had drawn sand into the sewer from above and created a huge cavity. The cavity was bridged over by top soil and street pavement until they collapsed.

A short time ago I went through the sewer with Roy Morse, city engineer of Seattle, and observed that the sewer line itself was in excellent condition and showed no sinking or failure of any kind, except for the few minor holes. Since the sewer is a masonry structure practically devoid of any longitudinal beam strength, this was amazing at first. But only one explanation is possible—there is no quicksand at the sewer level. Otherwise such a structure would not have survived for any appreciable length of time. Here is indisputable evidence that the bottom of a quicksand bed (somewhere above the sewer line) has remained stable over a long period of years.

In Puyallup several years ago, a contractor was laying a sewer in a quicksand condition so severe that his attempts to build up a bed out of bank run gravel resulted in each load of gravel sinking out of sight before he could bring in the next load. In desperation he drove a sheetpile section under each section of pipe and completed the line as best he could. Makeshift as the procedure was, the line is still functioning. This indicates that the bottom he found at approximately 20 ft has remained constantly solid.

• **Soil analyses no help**—The final question is how can you determine ahead of time the existence of quicksand. A detailed determination of conditions to be expected is completely impossible unless you are extremely familiar with the area. However, unless the region is completely uninhabited, the possible existence of quicksand should not be difficult to establish—through "old-timer" analysis. Soil analyses are of great value in many instances, but the realm of quicksand is certainly not one of them. The phenomenon basically involves hydraulics, not soils. On the other hand, the most ignorant of the natives almost always can give a great deal of enlightening knowledge.

The most important point, however, is this. While we might concede that an engineer should not be blamed for failing to anticipate quicksand, he most certainly should be blamed for failing to handle it properly once he becomes aware of it.



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PICTURED ABOVE: The Scattergood Steam Plant, in Southern California, on the edge of the Pacific Ocean. The excavation, made in beach sand, measured approximately 300′ x 100′ at sub-grade, with a maximum cut in the deep section of 32′ below the water table.

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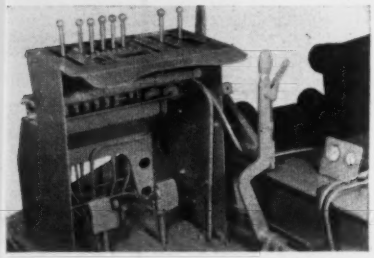
Six reasons why Link-Belt Speeder . . .



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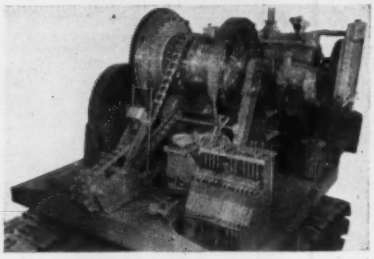
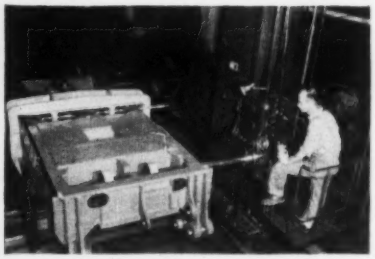


2. BONUS USABLE HORSEPOWER — The extra strength built into load-carrying components permits K models to take full advantage of the engine's available horsepower and still remain well within engine manufacturers' recommended speeds.



3. PRECISION ALIGNMENT TO CUT MAINTENANCE — Close-tolerance machining, including jig line boring (above), means closer fits . . . less chance for eventual misalignment . . . no need for shims . . . better parts interchangeability.

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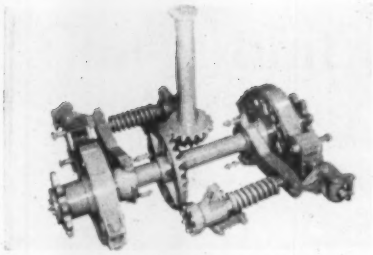

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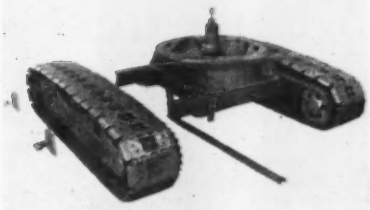

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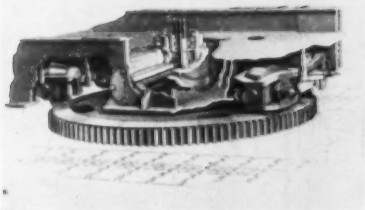

6. NO BINDING STRESSES ON CENTERPIN OR ROLLERS—Exclusive centerpin trunnion and oscillating conical roller design eliminates concentrated centerpin loadings . . . prevents shearing or bending . . . minimizes wear.

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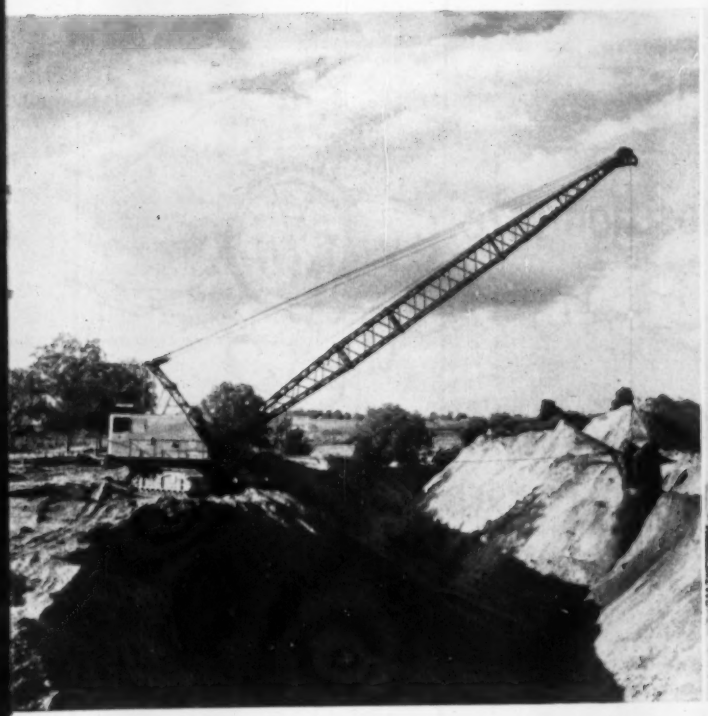

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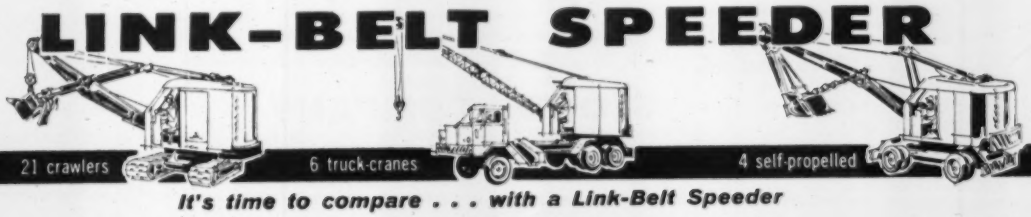
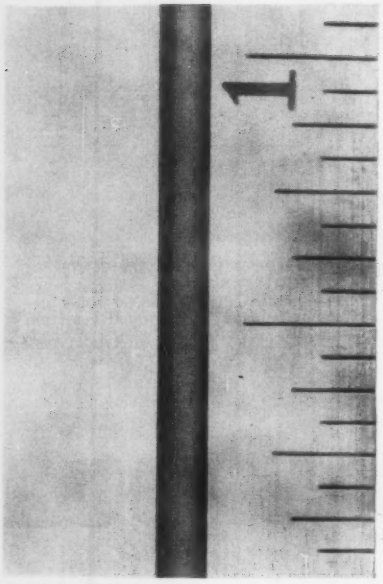


It's time to compare . . . with a Link-Belt Speeder



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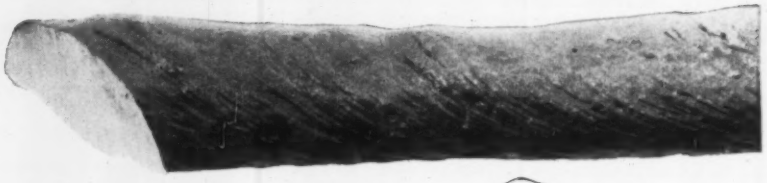
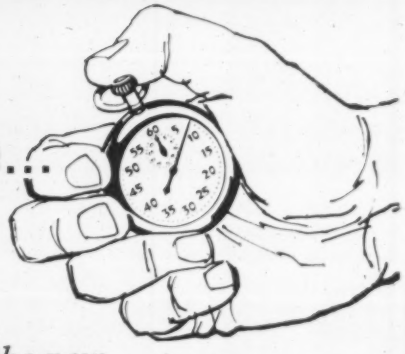


Clock the deposition rate...



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Consultant Designs-In Economies

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Bridge Engineer
Charles A. Maguire & Associates
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About $1½ million is being saved on a Rhode Island road job. Some of this can be attributed to increased competition for highway work that existed at bid-call time. But a good part of the savings is the result of economies designed in by the consulting engineers engaged for the job, Charles A. Maguire & Associates.

The consultant applied some old ideas in rather new ways and devised a new method of positioning the tensioning strands of prestressed beams for the 11 bridges in the highway to come up with a more economical method of construction.

Low bid for the 2½ mile Interstate System project, the East Providence Expressway, was $4.9 million by the M. A. Gammino Construction Co., Providence. The spread of the first three low bidders was less than 5½%.

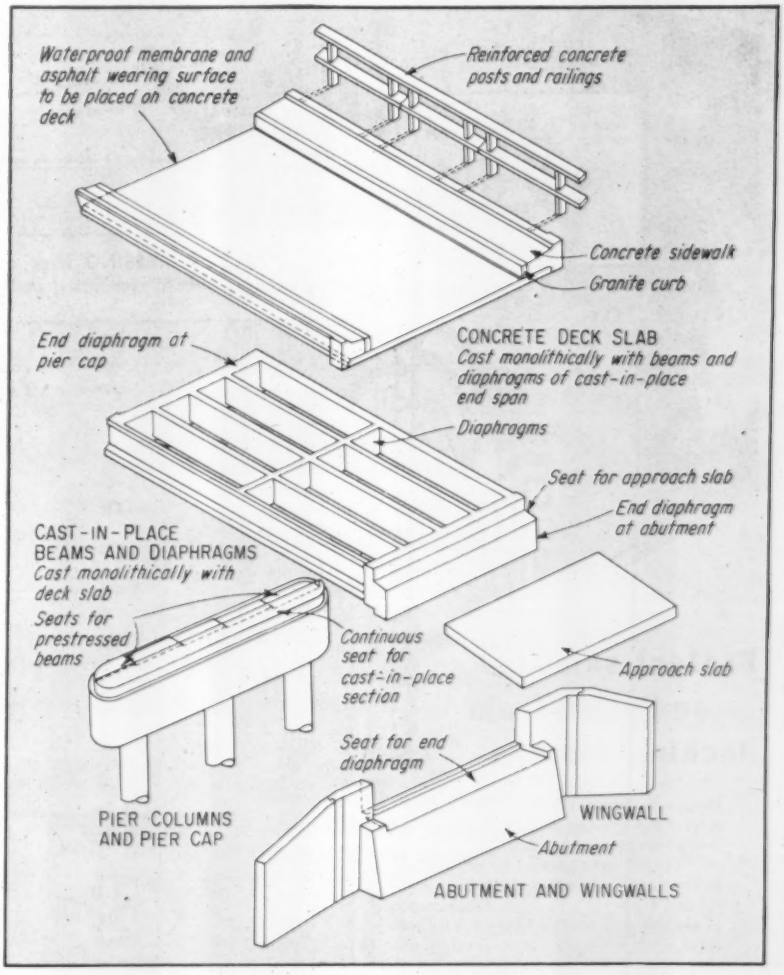
• **Tight bridges**—The expressway is a six-lane, limited-access divided highway passing through an urban area. City streets cross on grade separations.

Geometrics of the highway control's bridge crossings. Hence many of the bridges are on vertical and horizontal curves; large skews are common and occasionally the bridge decks terminate on short-radius curves at street intersection.

Bridge foundation conditions are extreme. In the westerly section of the highway, fine sand, silt and a thin layer of till interpose on one another for 100 ft before rock is encountered. In the central section, rock ledge follows the surface of the ground at convenient depths of less than 20 ft. In the easterly section, silt and fine sand overlay rock for depths of 70 to 90 ft.

• **Small abutments best**—A cost analysis of possible bridge designs indicated that small abutments supported on piles, with end spans about 30 ft long of T-beam concrete construction, would be less expensive than high abutments and wingwalls. A novel feature was the incorporation of this type of end span with rigid frame bridges.

As a money and work saving device, three rigid frame bridges closely following one another are designed with dimensions as nearly identical as possible. This permits the contractor to get three uses from his forms and falsework. The three bridges are of two 62 ft spans with 30 ft end spans. Cost between face of rails averaged $14.75 per sq ft above piles, and $17.20 per sq ft including all costs.


Waterproof membrane and asphalt wearing surface to be placed on concrete deck
Reinforced concrete posts and railings
Concrete sidewalk
Granite curb
CONCRETE DECK SLAB
Cast monolithically with beams and diaphragms of cast-in-place end span
End diaphragm at pier cap
Diaphragms
Seat for approach slab
End diaphragm at abutment
CAST-IN-PLACE BEAMS AND DIAPHRAGMS
Cast monolithically with deck slab
Seats for prestressed beams
Continuous seat for cast-in-place section
Approach slab
Seat for end diaphragm
PIER COLUMNS AND PIER CAP
WINGWALL
Abutment
ABUTMENT AND WINGWALLS

SMALL ABUTMENT and cast-in-place end span proved most economical design for bridges along the highway.

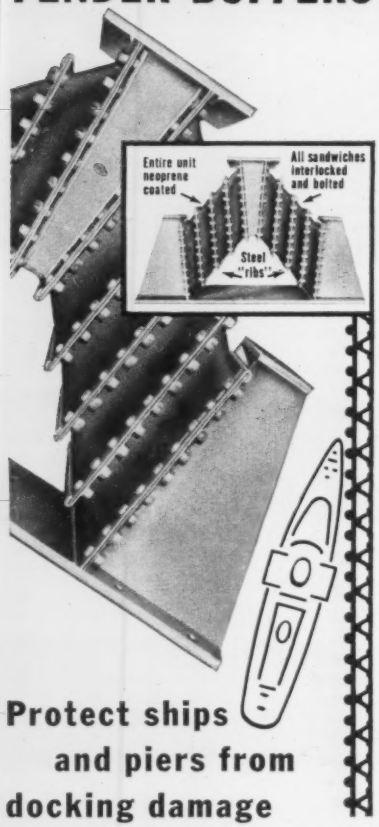
• **Models helped**—In preparing designs for the bridges, the consultants made extensive use of models. Joseph A. Murphy, chief bridge detailer, made preliminary design sketches of all important details and prepared scale models where any difficulty could be foreseen. An end span was developed that incorporated the backwall of the abutment with the end diaphragm of the cast-in-place concrete T-beam deck slab. Small abutments were then developed that required only a front, back and two end forms, which could be used repeatedly.

A precast concrete bridge rail was developed that could be made off the job site and set in prefabricated units. This rail was another development of the model system of detailing. It is 3 ft high and was bid for $11 per lin ft —$4 under the state's estimate and $7 under current competitive prices.

• **Positioning strands**—Prestressed beams were standardized. Initially, they were designed for pretensioning and with sleeves enclosing the strands near the ends of the beams to prevent bond. This was intended to reduce the prestress at those points to tolerable levels. However, the U.S. Bureau of Public Roads expressed some scepticism of the positive action of the sleeves, making completely new designs necessary.

(Story continued page 54)

RUGGED RAYKIN FENDER BUFFERS



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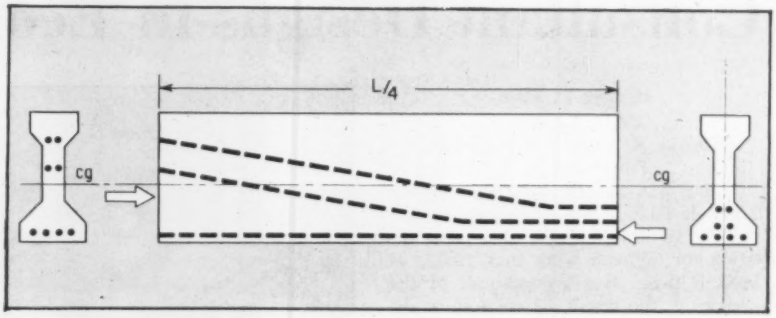
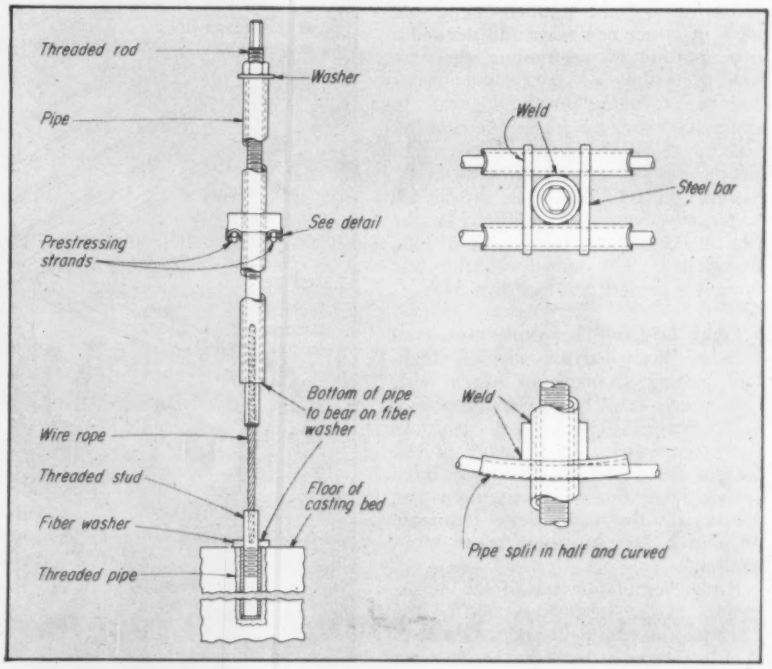
. . . Bridge beams use deflected strands



CENTER OF PRESTRESSING force is raised at ends of bridge beams by deflecting tensioning strands. A sleeved strand method to achieve same result was discarded.



HOLD-DOWN for deflecting two strands at a time keeps shearing forces to a minimum.

The writer, together with Edward Keiner, assistant bridge engineer, and Mr. Murphy, devised a system for deflecting prestressing strands to achieve approximately the same result as sleeving. The strands are deflected two at a time at 2 ft intervals to reduce shearing forces to a minimum in the areas of angle change of the strands. This system appears to be economical. The price submitted by the low bidder for this design was $23.75 per lin ft erected in place.

• **Beam bearings**—Another feature that promoted economy was incorporation of neoprene elastomeric bearings for the prestressed beams. The State of Rhode Island's bridge engineer, Daniel O. Cargill, and the consultant devised a system for testing the bearings in compression and shear loading simultaneously.

A designed shear loading assembly was placed between the heads of a Southwark-Emery compression machine. Two 6 x 12 in. neoprene bearings of varying thickness were positioned in the shear loading assembly with a steel or concrete shear plate between them. Vertical compressive loads were applied up to 144,000 lb. At the same time, a 40,000 lb hydraulic jack in the shear loading assembly applied a horizontal force on the sheer plate up to 40% of the vertical load. The information received from this testing program encouraged the use of neoprene bearings in the design of one of the bridges.

The end result was more structure per public dollar.

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Bethlehem Form Stakes speed anchoring jobs because they drive fast. They are economical because they can be pulled out and re-used many times.

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BETHLEHEM STEEL

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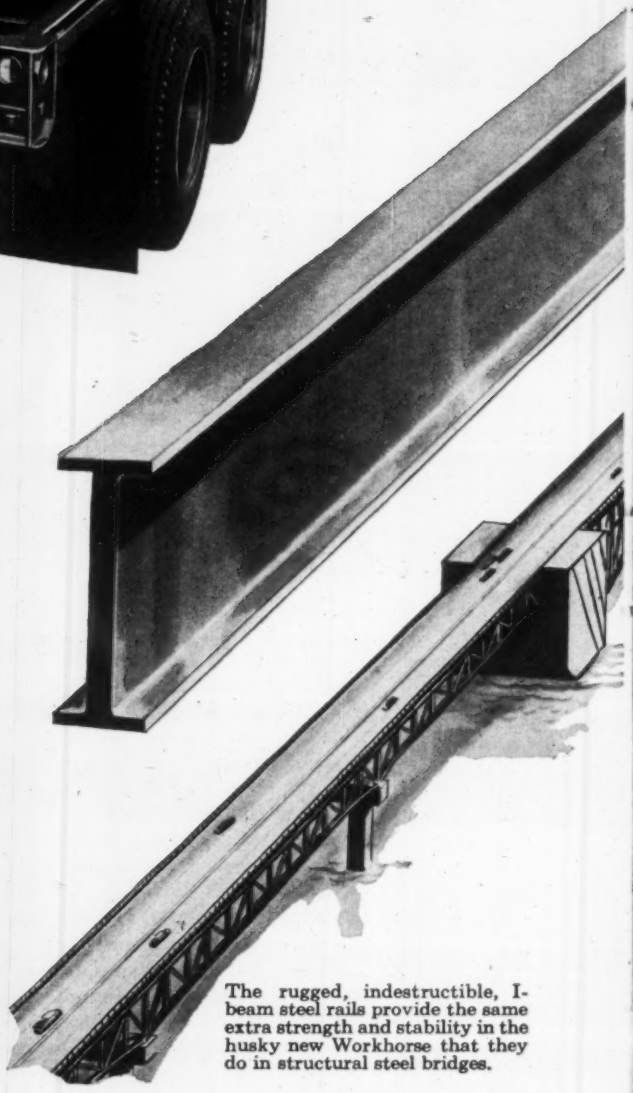

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The rugged, indestructible, I-beam steel rails provide the same extra strength and stability in the husky new Workhorse that they do in structural steel bridges.

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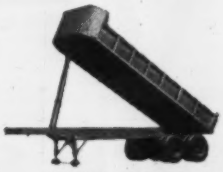
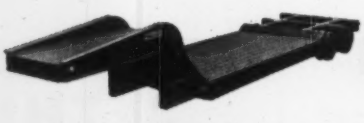


HOIST DUMPS



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Milan-Naples "Highway of the Sun" will allow 100 mph travel through rolling Italian hills.

How Italy Is Revamping Its Road

Italian roadbuilders are hard at work on a program that will more than triple the country's mileage of highspeed expressways. And they're off to a good start.

Within the next five years, a giant superhighway system will be etched out on the Italian countryside (see map). The Milan-Naples "Highway of the Sun" will be completed, along with the Turin-Venice Turnpike. And, if current plans develop as expected by 1968, France will be linked to Yugoslavia by expressways crossing northern Italy, a speedway will be in operation along the Adriatic Sea and Italy's western Riviera will be connected by highways to both Switzerland and France.

There are even greater plans for the rest of the country's road system—including a 140 mile Naples-Bari tollroad across the peninsula, a 225 mile pike from Naples to Reggio Calabria on the toe of Italy's boot, and another of 125 miles joining Palermo and Catania on the Island of Sicily.

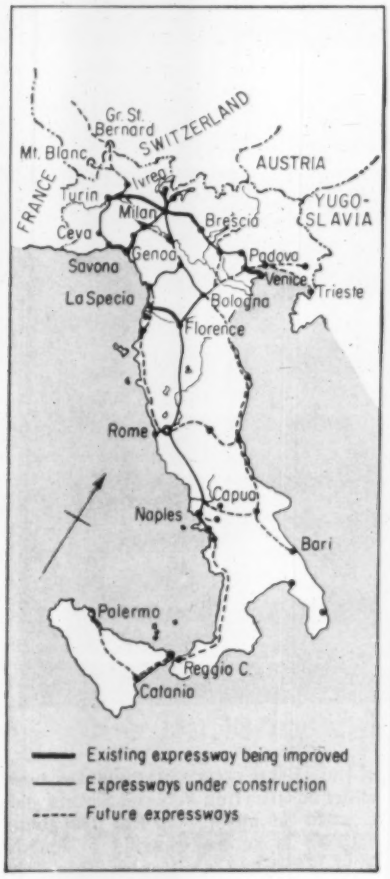
However, it's unlikely that much will be done on these southern roads until 1968. There isn't enough government money available and the outlook for private profit isn't as good there as it is in the north.

The first stage of the program was stimulated by a 1955 law appropriating $160 million over a 10-year period. But private interests are playing a major role, in exchange for 30-year toll concessions (after which the government will take over). Private groups and provincial administrations are financing about two-thirds of the $425 million worth of projects under construction. The rest is financed by the government's $160 million highway fund.

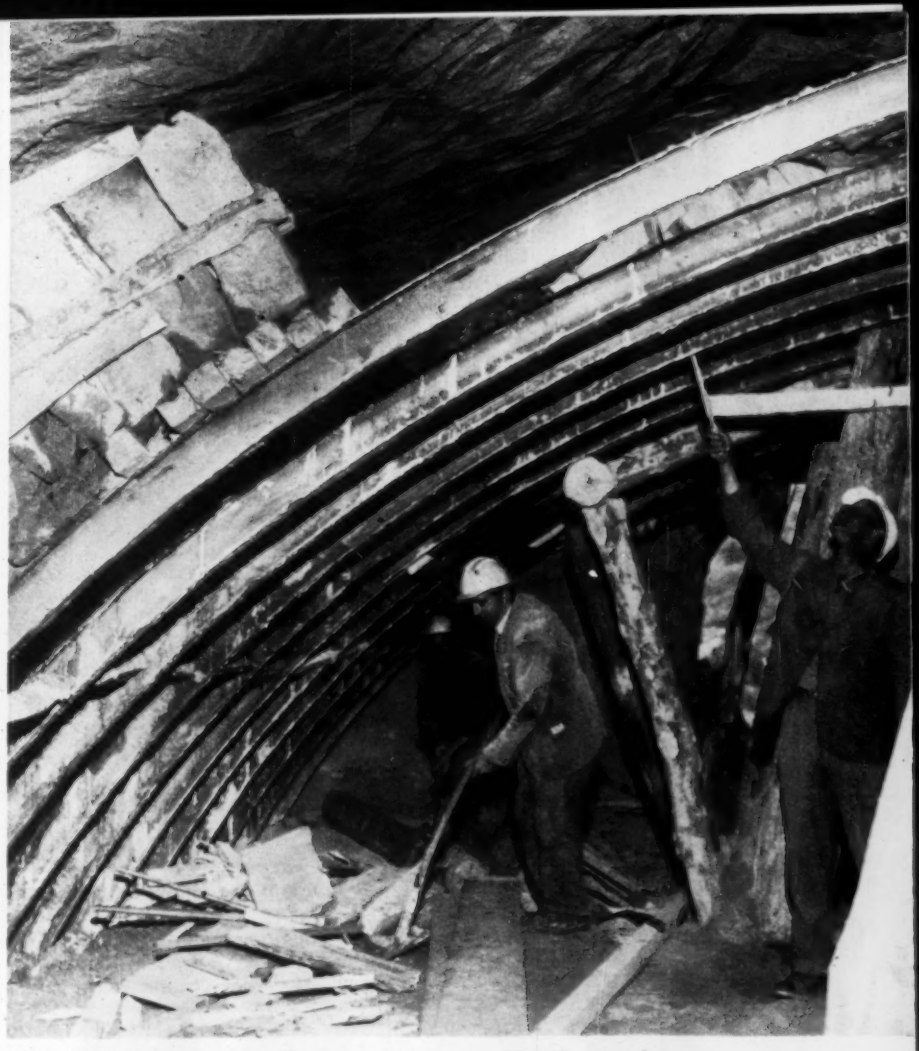
Most of the new work involves construction of dual highways, two lanes each—except for two short stretches of three-lane roads.

There's highway improvement planned too. Most of Italy's pre-war 300 mile highway system is being enlarged from two to four lanes by the public works agency responsible for the country's highways, the Azienda Nazionala Autonoma Stradale Stati. The goal of the ANAS is a completely integrated, nationwide system of four-lane highways. The progress is not spectacular by some standards, but progress is being made.

• **For 100 mph speeds**—By far, the country's most impressive project is the Milan-Naples "Highway of the Sun"—a $300 million, 460 mile road designed for 100 mph speeds. When this high-



Map shows extensive plans.



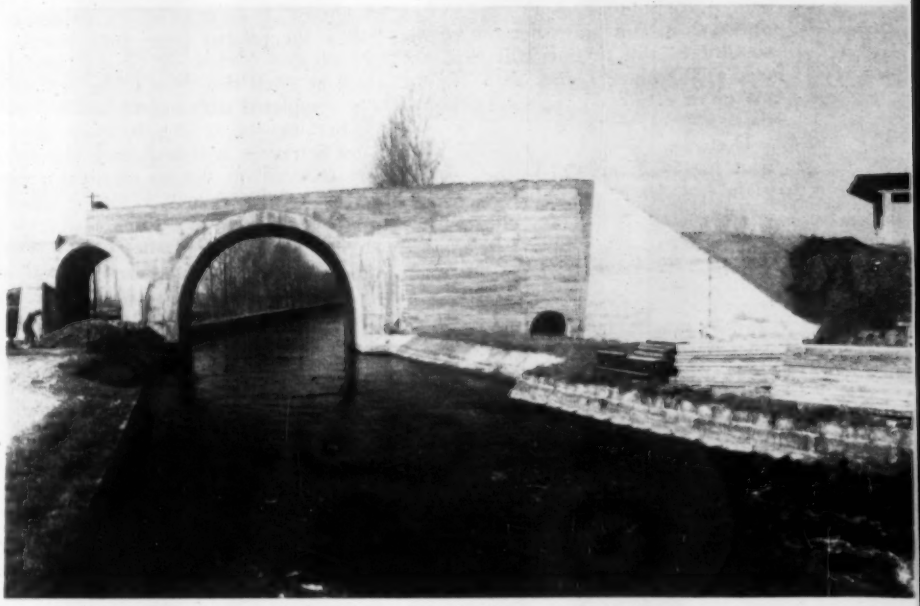
Tunnel work is common. There are 24 on one 25 mile stretch . . .

System

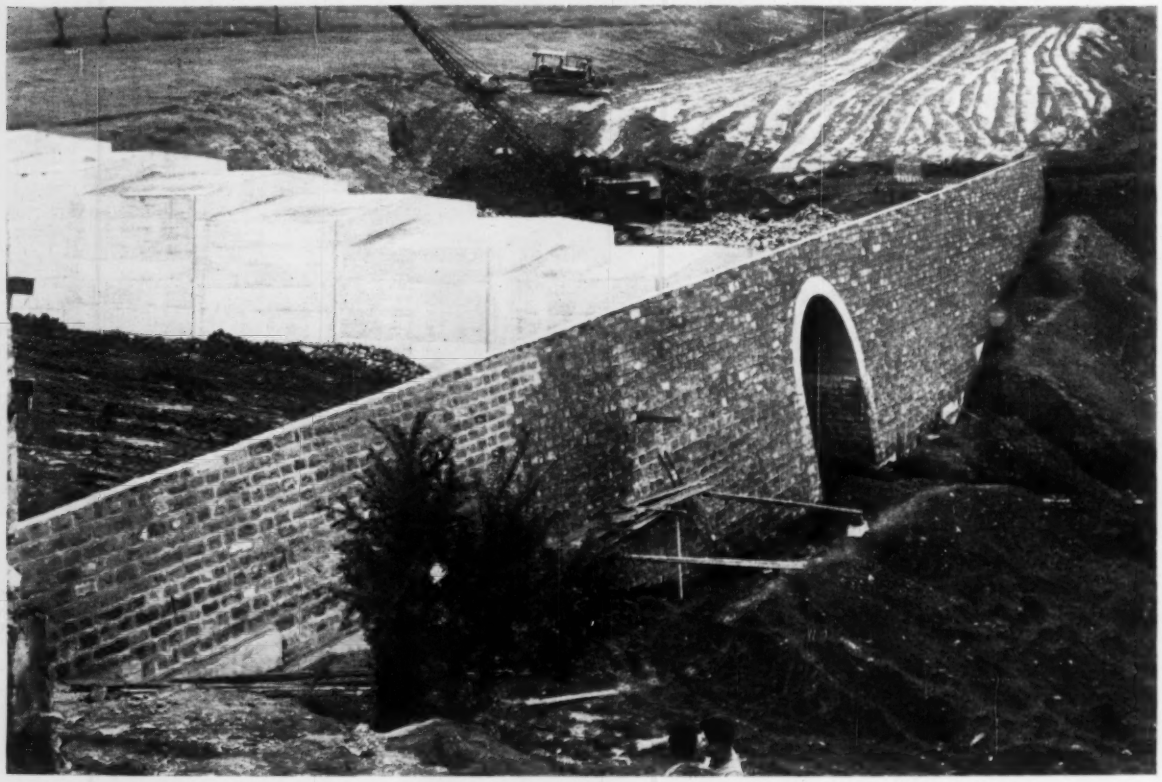
way is completed an automobile will be able to travel between the two terminal cities in six hours—three hours less than the fastest train.

About 1,700 machines and 7,000 men are now working on the 175 mile stretch between Milan and Florence and the 25 mile section between Naples and Capua. All construction is reported on schedule, and in some sections, it is ahead of schedule. Before the end of this year, the Milan-Piacenza and the Naples-Capua links will be open, and the Piacenza-Florence stretch should be in operation by late 1959. Work on the Florence-Rome section will get underway by next January, and the Rome-Capua trunk will be under construction in early 1960.

The most difficult part of the "Highway of the Sun" is between Bologna and Florence, where the Appenines



. . . Another 32-mile stretch will have 124 bridges and viaducts.



This step-roof, brick-walled culvert runs beneath the Highway of the Sun.

mountains must be crossed. Here, on one 20 mile section just north of Florence, there will be 16 viaducts over 650 ft in length, and 2½ miles of tunnels. The two longest tunnels will be 2,660 ft and 2,170 ft respectively. Substantial deposits of slate-like argillite and frequent rock slides are serious problems in this area. Because of the conditions, this section will have the road's minimum radius, 825 ft, the maximum gradient, 3.75%, and the shortest visual distance, 600 ft.

However, the roadbed will be 80 ft wide and will include a 10 ft center island and 10 ft side lanes for motorcycles and scooters. At the tunnels, sidelanes will be eliminated and the roadway reduced to a 32 ft width. Opposing traffic will be separated by construction of separate tunnels or by a center support wall where a single tunnel is built.

On the Milan-Bologna section—currently the site of greatest activity—there five major structures are being built. Among them is the Po River Bridge, a 17 span, prestressed concrete structure 3,920 ft long.

At the same time, five other major highways are under construction in the north of Italy. One of these is the 90 mile Brescia-Padova turnpike, which will complete the Turin-Venice road. The other four are in the Turin-Genoa-Milan triangle. They will improve the connections between the ports on the Linurean Sea and the industrial provinces of Lombardy and Piedmont.

Biggest of the northern roads is the 54 mile, $27 million Milan-Serravalle highway. It is expected to reduce by 40% the present travel time between Milan and Genoa. A 12 mile stretch will be open this month, the rest will be completed early next year.

Because the terrain between Milan and Serravalle is almost level, the only structure of any size on the road is the 11 span, 2,530 ft long, Po River Bridge at Corona. The $1.6 million structure will have dual 25 ft roadways, a 3 ft traffic divider and two 4.5 ft sidewalks.

South of Serravalle ANAS is widening an existing 33 ft wide roadway. The roadbuilding problems there are legion. The terrain is so rugged that in one 30 mile stretch there are 30 bridges and viaducts and 11 tunnels, one of them 10,000 ft long.

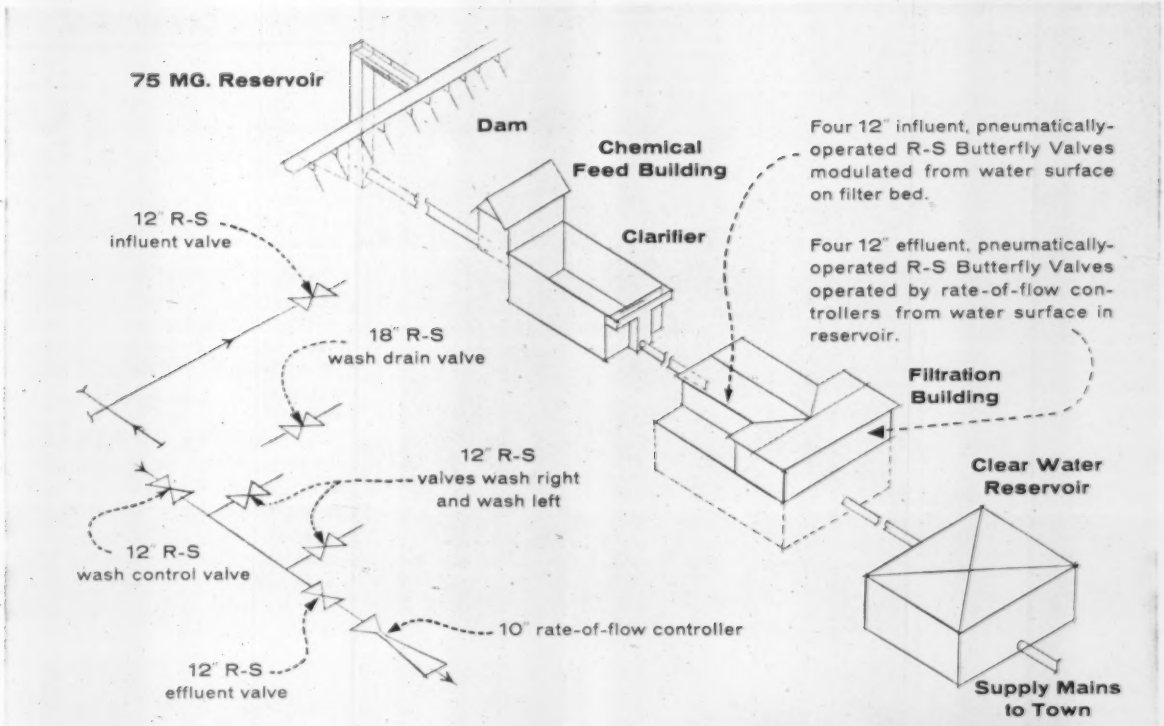
Equally as bad, if not worse, are conditions between Genoa and Savona. A three lane road being built there will have a 785 ft viaduct in the Neirone Valley, a 400 ft long, reinforced concrete, parabolic arch bridge over the Lupara River, in addition to 22 tunnels.

Similar conditions face the builders of the 25 mile, three-lane highway now under construction between Savona and Ceva to the north. On this road there will be 24 tunnels ranging in length from 230 ft to 2,670 ft, plus 30 bridges and viaducts. Of the $17.6 million cost for the Savona-Ceva highway, private groups are supplying two-thirds and the government is contributing the rest.

Further north, in the province of Piedmont, construction has just begun on a 30 mile long, four-lane road from Turin to Ivrea. This $12 million project is the first leg of a highway system that will eventually link Turin with Switzerland by a long discussed tunnel through Mount St. Bernard, and with France, by a recently-started tunnel through Mount Blanc.

The construction problems on the Turin-Ivrea turnpike are few and the road is to be opened in late 1959.

Another highway where construction has just begun is the $45 million Brescia-Padova turnpike, which will complete the link between Turin and Venice. Except for a short stretch through the Berici Mountains in the vicinity of Vicenza, this 90 mile road will be built on fairly level ground. For the most part the maximum gradient will be 2% and except at its terminal points, the minimum radius will be 6,670 ft. As in the case of the Savona-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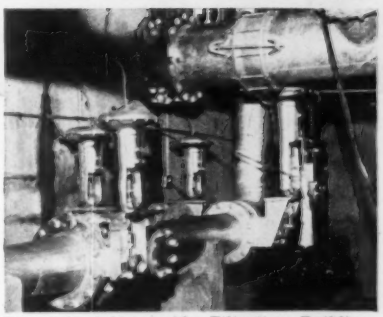
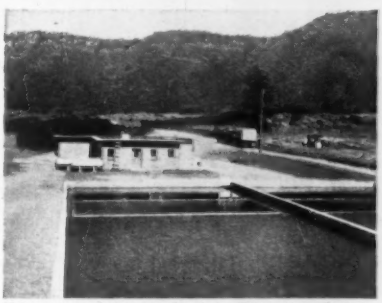
Four 12" effluent, pneumatically-operated R-S Butterfly Valves operated by rate-of-flow controllers from water surface in reservoir.
18" R-S wash drain valve
Filtration Building
12" R-S valves wash right and wash left
Clear Water Reservoir
12" R-S wash control valve
10" rate-of-flow controller
12" R-S effluent valve
Supply Mains to Town

Diagrams of Durango Plant from sketches by Dale H. Rea, Consulting Engineer, Littleton, Colo., designer of the plant.



Compact piping inside Filtration Building shows rate-of-flow controller in left foreground, with wash and wash control valves behind it. This arrangement is diagrammed at left, above.



Two settling basins feed to Filtration Building in this 8.7 mgd system.

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Ceva highway, two-thirds of the money for the Brescia-Padova Turnpike comes from private groups.

One other project soon to be started under private auspices with government help is a 32 mile turnpike running between Fornovo and Pontremoli to help span the 74 miles between Parma and La Spezia. This highway is expected to cost $23 million. It will have 124 bridges and viaducts and 1.5 miles of tunnels. Longest tunnel will be a 6,000 ft bore through Mt. Cisa. The maximum gradient will be 3.5% and the minimum curve radius will be 500 ft.

Two existing two-lane roads, one running from Milan to Brescia and the other from Padova to Venice, will be widened to four lanes by ANAS. The government agency has received a 12.8 million loan for the work and expects to start soon.

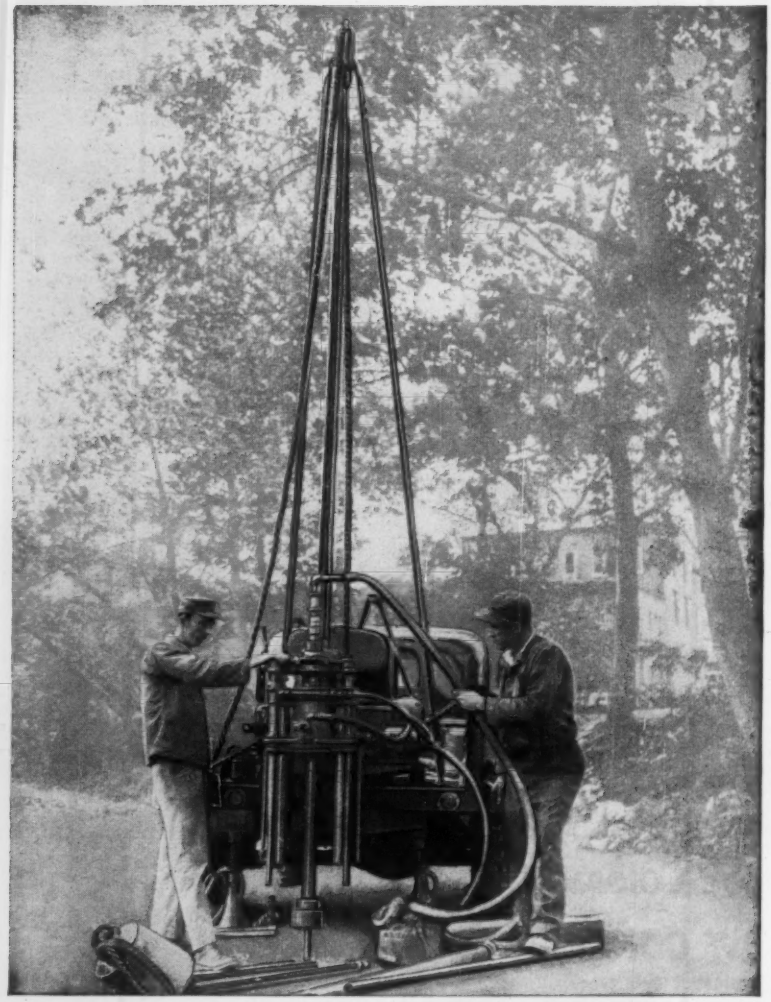
For the south of Italy, there is little prospect that any appreciable road work will be done. Traffic doesn't warrant the expenditures and the government hasn't got the money. It is generally conceded by Italian road planners that the $160 million fund established in 1955 is far from adequate. It is also claimed that unless remedial action is taken, Italy's highway system will remain inadequate in spite of the current push in highway construction.

Iraq Development Board Blasted by New Regime

The new Iraqi Republic's Baghdad Radio, monitored by ENR's correspondent in Beirut early this month, painted the Iraq Development Board, whose construction projects were the pride of the old regime, as an arch villain. It said the Iraqi members of the Board were "thieves" and that the Board's projects were designed to serve "special interests and disregarded the people's welfare."

All the Iraqi executive members of the Development Board have been dismissed, and a committee will temporarily run the Board, consisting of Prime Minister Abdel Karim Kassem, his deputy, Colonel Abdel Salam Aref, and the ministers of finance, agriculture, social affairs, development and economics.

Before the Baghdad coup d'etat, the Development Board was made up of 10 members, including the Prime Minister, the ministers of development and finance and seven others. One of them was an American, Clifford A. Willson, who was on vacation in Europe when the revolt broke. The contract of a British member, Michael Ionnides, was not renewed earlier this year. According



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Illustrated above, on location, is a truck-mounted Sprague & Henwood Model 30 Core Drill Machine. On this foundation project this machine is recovering both good samples and good cores. The soil samples have already been recovered from this boring and now the machine is being used to core rock. Because of the versatility and economy of this machine it is becoming a favorite of many contractors and other users throughout America.

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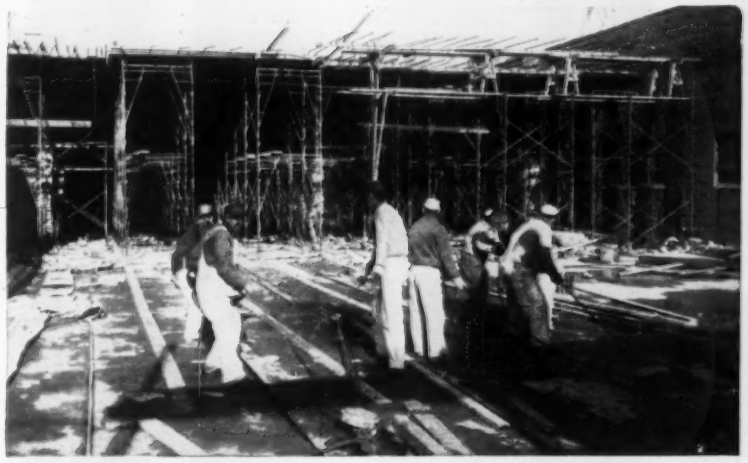
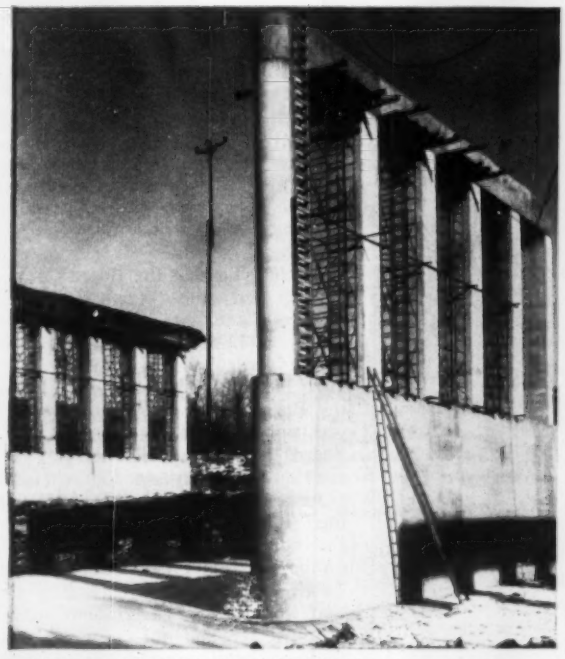
Shoring Methods...

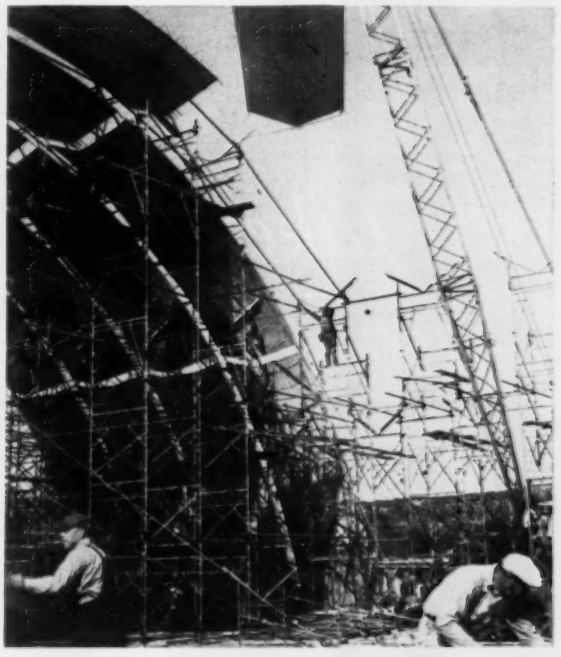
A Picture Report on Efficient Ways to Shore Concrete . . . by Patent Scaffolding Co.



FAST METHOD MOVES SHORING WITH FORMS—Soaped sills, placed under shoring legs, provide fast movement of 960 sq. ft. sections of "Trouble Saver" Shoring with formwork, to succeeding drophead panels on this slab job at Kentile, Inc., So. Plainfield, N.J. Method uses only half the shoring (462 frames) and formwork usually required, and saves the contractor, Fred J. Brotherton, Inc., considerable time, equipment and costs. Each section is moved, as shown, to its new location in just 15 minutes.



EASY-TO-ERECT PIER SHORING—"Trouble Saver"® Steel Shoring, made with 3'-wide ladder frames, provides ample support for beams on several pier capitols on this bridge in Palmyra Township, Pa. Frames, spaced 3' apart, shore capitols 3'6"-wide by 4'-thick. Built-in ladders give workers quick access for forming and stripping. Willis, Paul & Proctor, general contractor. P.S. Co. offers engineering layouts specifically detailed for every job.



CORRUGATED BARREL ROOF SUPPORT—Support for this unusual corrugated, reinforced concrete roof is provided by "Trouble Saver" Shoring towers with 104 special V-shaped cradle frames. These units, designed by P.S. Co., were set on top of the shoring frames to conform to roof segments, which measure 10' 3½" wide and 2'9" deep in cross section. Holy Trinity H. S., Trinidad, Colo. Platt-Rogers Constr. Co., gen. contr.

Complete scaffolding equipment and engineering service offered through nation-wide sales offices or representatives. Look under Patent Scaffolding in the Yellow Pages for your nearest source.

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THE PATENT SCAFFOLDING CO., Inc.

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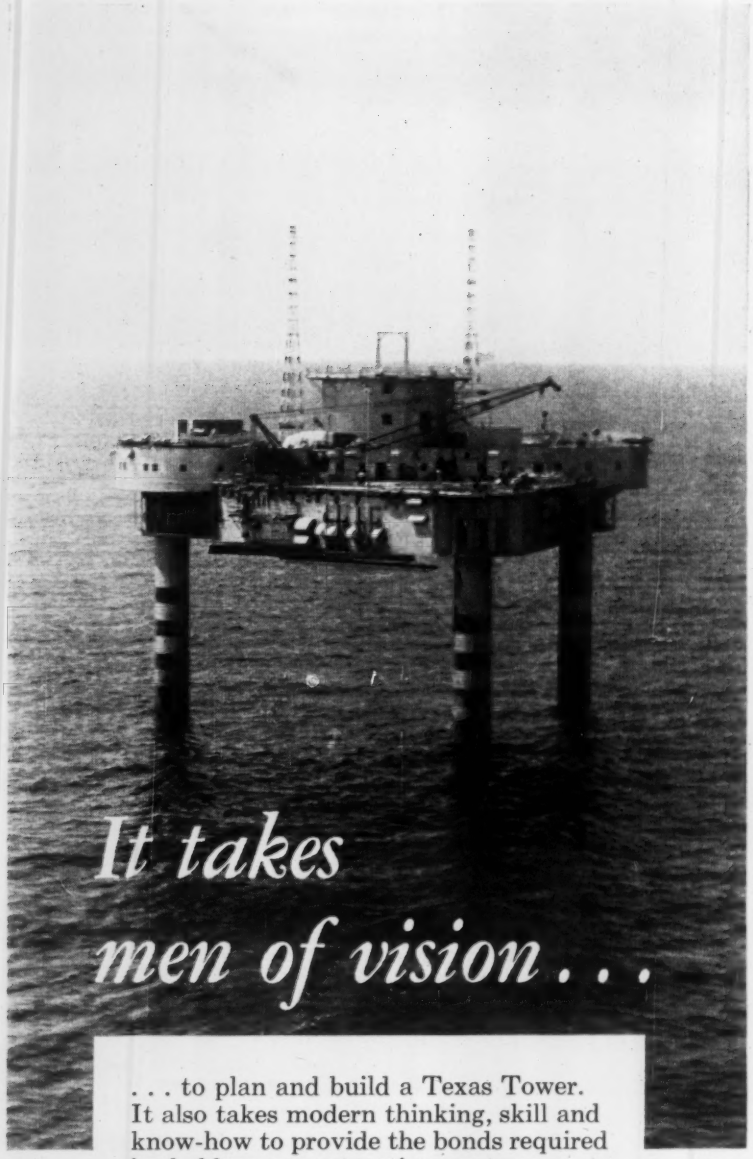

. . . to plan and build a Texas Tower. It also takes modern thinking, skill and know-how to provide the bonds required by bold new construction ventures.

THE FIDELITY AND CASUALTY COMPANY OF NEW YORK continues, year after year, to keep pace with progress—providing all kinds of bonds and insurance—for all types of construction projects—in all parts of the world.

The Fidelity and Casualty Company of New York

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A Member Company of America Fore Loyalty Group

. . . International

to available reports, the matter of appointing foreign members to a new Board is still under consideration by the new government.

Minister of Development Fuad-el-Rikabi who, according to the Baghdad radio, made the charge of thievery against the Iraqi members, is the youngest member of the new republican cabinet. A graduate engineer from Baghdad University, he is 30 years old and had served four years as an official of the Development Board, although, as a member of the outlawed Arab Socialist Renaissance Party, he also had been imprisoned by the previous government.

Development Minister Rikabi told the Arab News Agency that although the Board was set up to be an independent body, free from political influence and based strictly on commercial practices, the Iraqi members surrounded the work of the Board with corruption. "In the daytime they complied with the practices and procedures prescribed by the Board rules. At night when the Board's doors closed, they indulged in graft, entering into corrupt deals with contractors."

Asked by the agency how it was that contractors became partners in such practices, the minister of development is reported to have said: "Contractors wanted their work to run smoothly. They were ready to pay the price to insure that."

In charging that the Board's projects "disregarded the people's welfare", Fuad el-Rikabi cited his estimate that nearly one-third of the board's program was devoted to public construction and only 5% to agriculture. He also said the Board's road construction program was not "properly conceived." The Board wanted spectacular highways, and built few feeder roads he claimed.

Another cabinet minister, Mohammed Hadid, minister of finance, said the new government would veto all public building projects and "non-productive monuments," including those that would house government administrations. He did not say which public buildings he meant, but it is understood the ban could affect the following, most of which are in the blueprint stage: The Baghdad opera house, by Frank Lloyd Wright; Baghdad civic center by Alvar Aalto of Finland; a sports stadium by Le Corbusier of France; the Development Board building by Gio Ponti of Italy; a $3.5 million museum by Werner March of Germany; a $11.5 million medical center and hospital designed by the New York City firm of Litchfield, Whiting, Panero, Severud & Associates; and a 12,000-student university by Walter Gropius Associates of Boston.

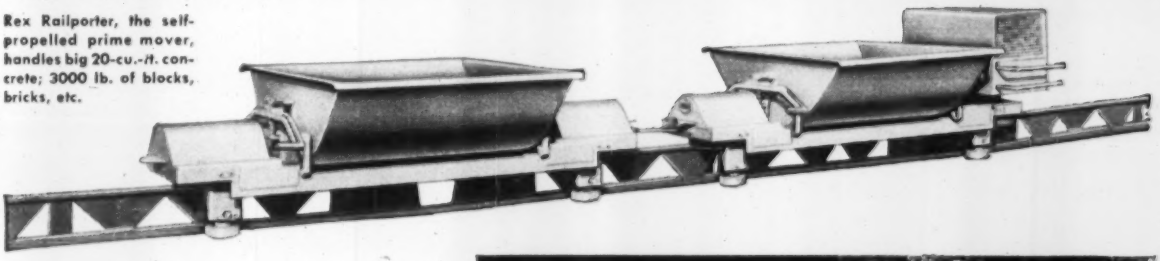
HOW REX RAIL PORTER (...the new idea in concrete handling)

SAVES ON... BIG JOBS

3000 cubic yards of concrete

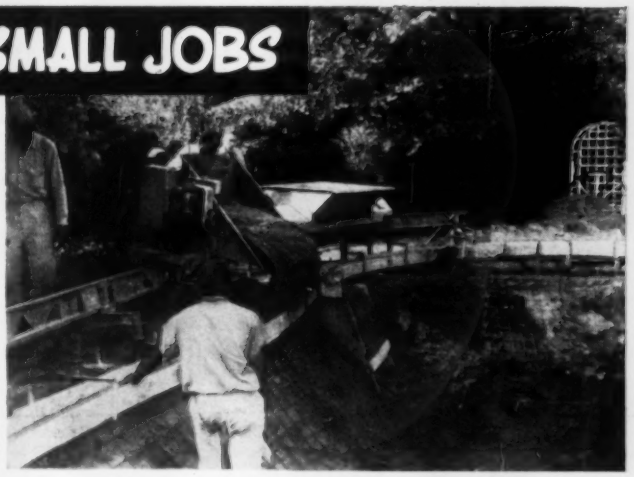
New Duke University dormitory gets economy assist—with Railporter handling *all* concrete in three-story structure built by Muirhead Construction Company, Durham, N. C. The Railporter averaged 120-foot runs—conveying and placing concrete at a 25-yd.-per-hour clip. From loading point to dump spot, Railporter traveled by itself, automatically stopping where wanted. Setup was fast, simple—Railporter operates on an easily placed monorail system, traveling straight lines, turns, grades.

President William Muirhead reported: "Railporter definitely reduces congestion around the job, eliminates runways and all the bulky handling. No manual conveying required—Railporter reduced our placing cost as well as time."



Rex Railporter, the self-propelled prime mover, handles big 20-cu.-ft. concrete; 3000 lb. of blocks, bricks, etc.

SMALL JOBS



24 cubic yards of concrete

Baughman & Bigelow, Detroit contractor, specializes on swimming pools. Railporter is the concrete placement "specialist" this builder uses. Here, on this residential pool, Railporter did both ends of the job—carried excavated dirt from pool site to street. Then it brought in all 24 yards of cement. Railporter's easy-setup monorails ran 100 feet, making sharp turns to negotiate tight areas between houses.

This busy contractor claims that few of these jobs would have been done if other methods were used, because Railporter solves the problem of conveying concrete rapidly in confined spots without disturbing lush lawns. In fact, "Railporter is an important selling method to homeowners for us—through speedy job completions without damage to surrounding areas," states this builder.

JUST PRINTED—an all-new, informative picture catalog and job-application book. Ask your Rex distributor or write CHAIN Belt Company, 4633 West Greenfield Avenue, Milwaukee 1, Wis.

CONSTRUCTION REX MACHINERY

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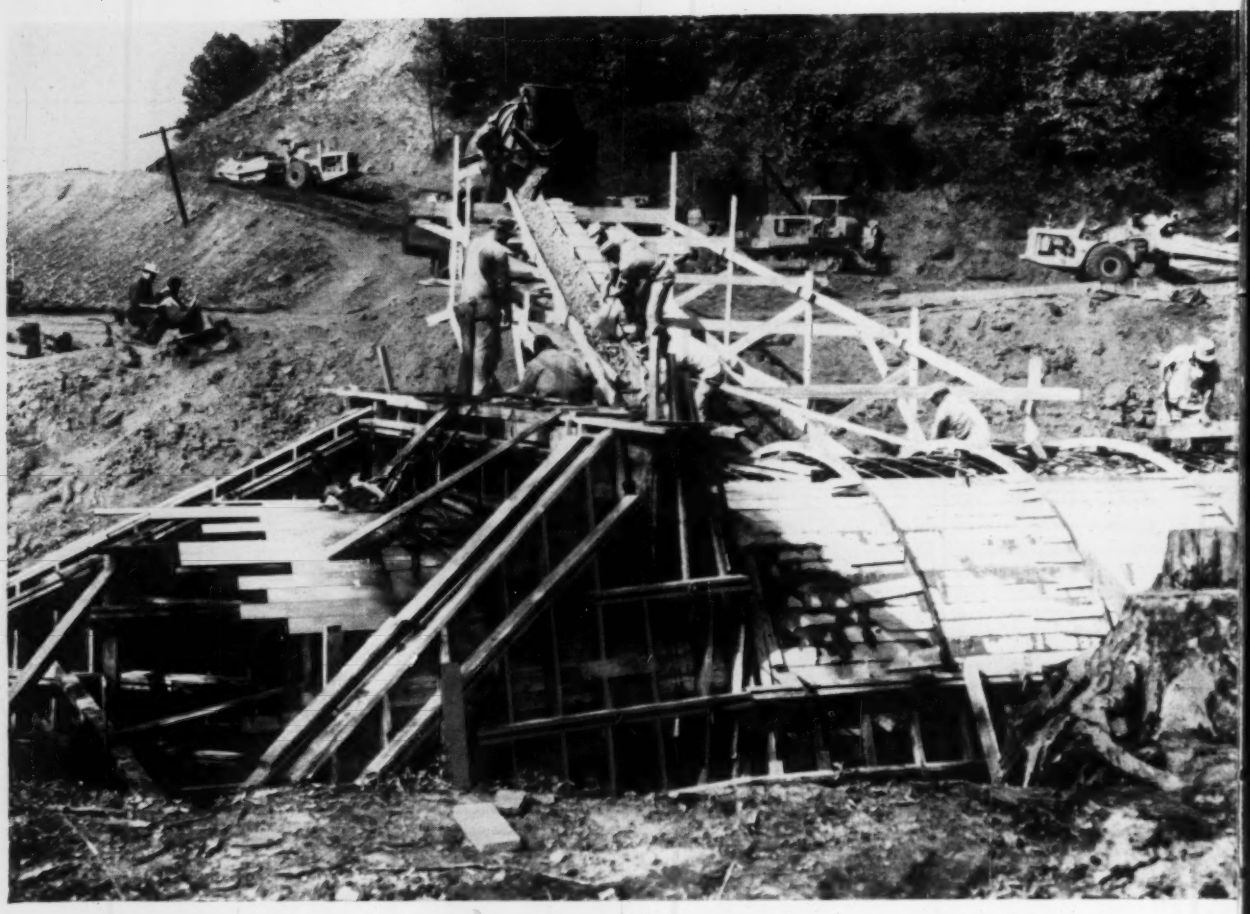


When a creek obstructs a 3½-mile road project, move the creek! That's what S. Gavlik, Contractor, did to relocate Route 422 near Indiana, Pennsylvania. The project, let under the Federal Highway Program, included three sub-surface concrete structures to carry off surplus water from the creek. Photo above shows concrete being poured for one of the three sub-surface structures. Gulf has served Gavlik for years.

Moving a creek . . . building a road . . . or dredging a channel? On any project . . .

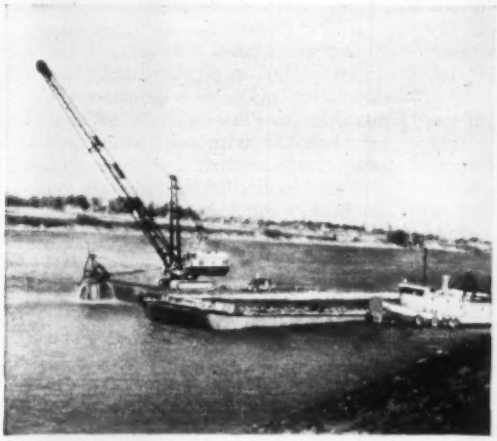
GULF CAN HELP YOU

You benefit three ways when you depend on Gulf for your fuels and lubricants. Here's why:

- You're sure of prompt delivery. Fifteen hundred strategically located warehouses—in 32 states—provide an unfailing supply of the fuels and lubricants you need.
- Your Gulf Sales Engineer will be on the job to help your operating and maintenance men get most efficient use of petroleum products. And he's backed by 1300 Gulf scientists and engineers at Gulf Research Center.
- Gulf quality fuels and lubricants insure best performance from your equipment . . . help you avoid mechanical delays. You'll have a smoother-running job . . . and lower operating costs . . . when you GO GULF.

One of the early jobs to be let under the Federal Highway Act was the relocation of Route 66 at Mamont, Pennsylvania. This job, which involves building an overpass over Route 80, was awarded to Ralph Myers Contracting Corporation of Pittsburgh. In the photo above are H. H. Hossler, Gulf Sales Representative, and Marion Hoke, Superintendent of Ralph Myers Contracting Corporation, on the job site. Myers depends on Gulf products to help prevent mechanical delays.

Dredging the South Cornwall Channel, a vital link in the $900,000,000 St. Lawrence Power-Seaway Project, is being done by S. J. Groves & Sons Company of New York City. Groves estimates that they will remove about 1,800,000 cubic yards. Tug and dragline use clean-burning Gulf Diesel fuel.



On the St. Lawrence Power-Seaway Project, one of the numerous trucking assignments of McConville, Inc., of Ogdensburg, New York, is hauling piling from Massena Intake. McConville is one of the many contractors on the St. Lawrence Project who knows he can count on Gulf performance and service.

GULF OIL CORPORATION
Department DM, Gulf Building
Pittsburgh 30, Pa.

GULF

Potomac Iron Works is using 10" Junior Channels (8.4# per foot) as stair stringers in this 15-story Baltimore, Maryland, state office building with 12-gauge J&L hot rolled sheet steel as risers. General contractor: Blake Construction Company, Washington, D. C. Architects: Fisher, Nes, Campbell & Associates, Baltimore.

"Clean edges and uniformity of Junior Channels speed stair fabrication"

. . . states leading architectural metal fabricator

"We have standardized on Junior Channels for stair stringers. They permit us to prefabricate stairs to exact dimensions with a minimum of waste," reports Mr. Milton M. Mulitz, president of the Potomac Iron Works, Inc., Hyattsville, Maryland.

Potomac Iron produced and installed 92 flights of stairs in this 15-story Maryland State Office Building and the adjacent six story Maryland State Roads building in Baltimore. Potomac Iron manufactures over 5,000 prefabricated stair units yearly for residential, apartment and commercial construction.

"Junior Channels are stronger than formed plate channels of equal depth. Yet their minimum steel weight speeds handling and fabrication," says Mr. Mulitz.

Junior Channels, hot rolled sections, are ideally designed for stairway stringers. Straight line simplicity and narrow flanges make possible their use with or without ornamental trim moldings and other modifications.

Write today for design data on Junior Channels, available in three sizes: 10"-6.5#; 10"-8.4#; and 12"-10.6# per foot. Write to Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh 30, Pennsylvania.

J&L STEEL

Jones & Laughlin Steel Corporation

PITTSBURGH, PENNSYLVANIA

STEEL CASING is handled in 32 ft sections. Air powered jacks of 200 ton capacity provide the push. Dual casings were required on the gas pipeline job.

62 Inch Casing Jacked Under Fill

In one of the largest jobs of its type, two 62 in. dia casings for a gas pipeline were jacked through a 135 ft thick highway fill. The work was completed recently for Carnegie Natural Gas Co. near Homestead, Pa.

The job was made even more challenging by specifications that limited deviation to 1 in. per 8 ft of length. The casing is made of ½ in. thick steel.

Pipe sections 32 ft long were handled in a jacking operation that continued around the clock to prevent "freezing" of the casing in the soil-rock bore.

As the casing was forced under the roadbed, miners excavated the earth and rock mixture from the face of the bore with standard mining tools. The muck was hauled out in a 1 cu yd mine cart and dumped by crane.

Air powered 200 ton jacks were used. Set up time for each "drive" was reduced as the jack worked along a notched railway and traveling backstops. When the casing length increased beyond two sections, it was necessary to concrete around the rails to prevent buckling.

While a new section was being welded onto one of the casings, jacking crews worked on the second pipe.

The gas company actually is building a 43 and 55 in. dia pipeline, which will require six dual 62 in. dia crossings, two dual 55 in. and five single 30 in. pipe crossings. The 30 inchers will be installed using conventional road boring equipment.

Texas Tunnelling Co. and Horizontal Holes, Inc., divisions of Boring and Tunnelling Co. of America, Houston, Tex., are installing the casings for road and railroad crossings as subcontractors to Williams Brothers Co.

Microwave Radio Controls 81 Mile Ohio Pipeline

To provide a direct key communication and telemetering system along Sinclair Oil Corp.'s 81 mile main petroleum pipeline in Ohio, a six channel microwave installation was made by Radio Corp. of America, New York City.

The system provides five channels for voice communications and supervisory control between Marian and Toledo and intermediate stations. A sixth channel will be used for telemetering and monitoring the system's performance. The controller at headquarters can check any station by dialing the station's code number to receive an automatically coded status report. "Hot" standby apparatus at each station automatically goes into operation if malfunctioning occurs thus preventing stoppages.

(*Field & Office continued page 70*)

Easy, Proven Way to Permanently Bond New to Old Concrete – for less than 4¢ per square foot!

WELD-CRETE®

Weld-Crete is the patented, job-proved liquid bonding agent which enables you to *permanently* bond new concrete, or cement plaster, *directly* to any other structurally sound surface no matter how smooth! No costly, time-consuming surface preparation. Just apply, let dry, and pour or trowel new concrete. Ideal for new construction, remodeling, repairs . . . *ramps, floors, precast shapes, driveways, highways, walls, machine mounts and pads.* Weld-Crete has equal bonding permanence all climates, all surfaces, all sorts of conditions. When used with quick setting cement topping you can lay new floors, ramps, driveways one day and run heavy truck traffic over them the next. Get fact-packed literature from your Building Materials Dealer, see Sweet's File, or write us direct. Address Larsen Products Corporation, Box 57561, Bethesda Maryland.

Typical **WELD-CRETE** Applications

GRANVILLE ST. BRIDGE, VANCOUVER, BRITISH COLUMBIA—One of the largest 8 lane bridges in North America. Here Weld-Crete was applied to bridge surface to bond cement dividing strips. Now, over 4 years later, bonds are as good as new. *General Contractor:* Dominion Bridge Company.

SEVEN CORNERS SHOPPING CENTER, FALLS CHURCH, VIRGINIA—During construction of this 600,000 sq. ft. structure, initially only part of floor was poured and floated to a smooth finish. Areas in which show windows would be added were poured as base slab only. Slab was coated with Weld-Crete. After store fronts were custom-built, delayed toppings of 1" to 1½" thick were poured with assurance of permanent bond to base slab. These toppings were then finished with asphalt tile, wood, or finish flooring of lessee's choice. Designed and constructed by The Kass Realty Co. of the Kass-Berger Organization under direction of J. Franklin Groff. *Concrete Contractor:* Moses-Ekco.

TIME SAVED TWICE! with SYLGAB

Continuous BAR BOLSTER SUPPORTS

1. The right material at the right time. No delays due to late delivery or mixed-up shipment.
2. Designed for speedy, easy installations. Allows fast pouring due to high rigidity.

A RUGGED SUPPORT FOR SLAB REINFORCEMENT

Made in 5' lengths of hard steel wire supporting bar with wire legs spaced either standard 5" distance or directly under each slab rod (4" min.)

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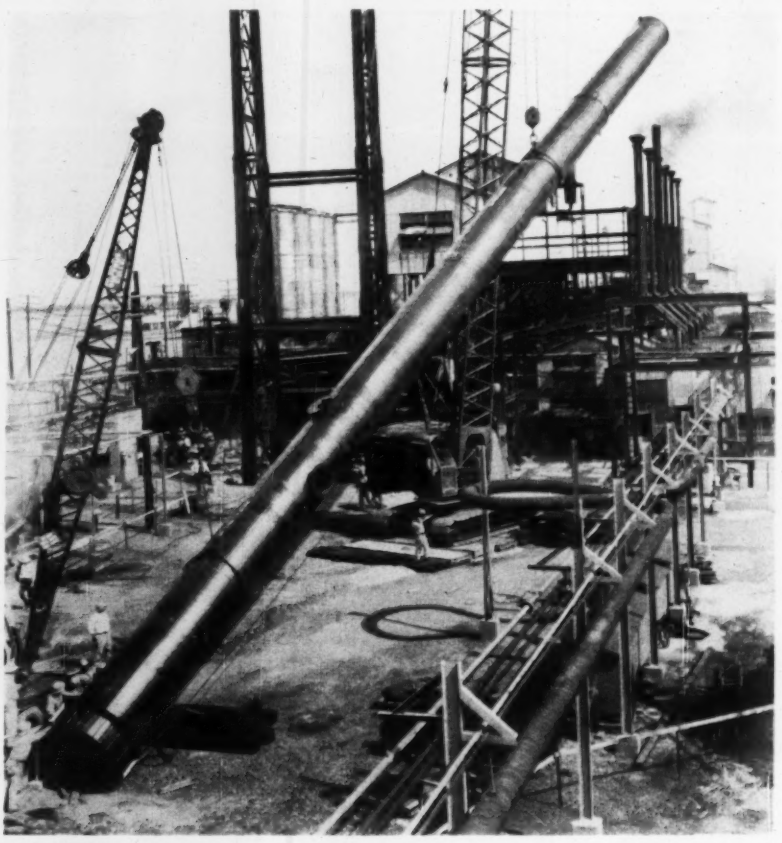


120 FOOT stack is raised as a unit after being hauled 20 miles from fabricating yard.

Erection Time: Three Hours

A 5 ft dia steel fume stack, 120 ft high and weighing 22½ tons was erected at DuPont's Repauno, N. J., ammonia oxidation plant in a fraction of the time required by conventional methods. Ordinarily a stack this big—three times longer than a telephone pole—is fabricated and shipped in three sections, requiring a week and a half to align and weld at the site.

This stack, however, was completely fabricated at a yard in Philadelphia and transported by double tandem truck across the Walt Whitman Bridge, along Route 130 and around three traffic circles to the Repauno site, 20 miles away.

After setting up rigging equipment, the fume stack was raised and bolted in place in 3 hours, using two cranes.

Imaginative ingenuity by Dud Pennington, a division engineer, made possible this time and money saving scheme. Exploring the planned route, it was calculated that the mammoth stack could be transported some 20 miles from Philadelphia without damage. DuPont engineers estimate $2,100 was saved. Total cost of the stack was $13,000.

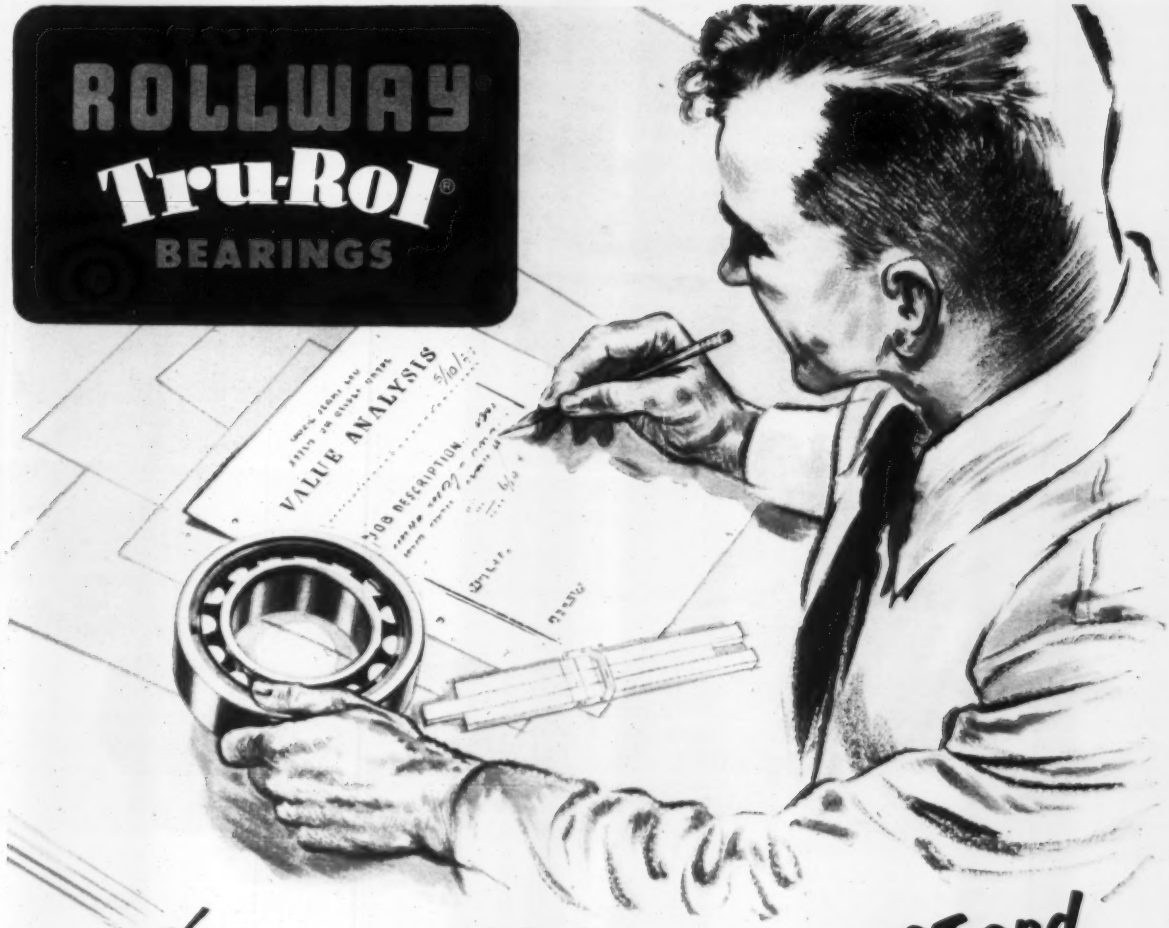
Paper Discs in Pipe Retain Inert Gas in Welding Area

Gas shields that disappear after doing their job are proving out in Stone & Webster Engineering Corp.'s pipe-welding operations.

Robert T. Pursell, a metallurgical engineer, with the firm, hit on the idea of taping a circular piece of 50 lb kraft paper across the interior of the pipe 6 in. from each of the ends to be joined. The paper resists the heat and pressure of welding—up to 600F and 3 or 4 ounces per sq. in.—and thus retains inert gas inside the pipe in the region of the joint being welded. During the annealing phase, to relieve stress, the paper and tape disintegrate.

The shielding and inert-gas-welding system is patented by Mr. Pursell.

ROLLWAY Tru-Rol® BEARINGS



For a sound balance of LOW COST and HIGH PERFORMANCE

When you need maximum precision bearings, buy them. They'll save you money. Rollway has them in all types and sizes.

But in hundreds of applications, maximum precision means *unused* precision. The speed, load and life-expectancy demands are not critical. For these spots, Rollway's Tru-Rol Bearings are engineered to give all that is required in performance at worthwhile savings in cost.

Maximum-Type Design and Construction Principles

The Tru-Rol segmented steel retainer is the strongest, most durable available in commercial-grade bearings. Its separator segments are formed to the curvature of the roller for true axial alignment. In combination with rollers crowned to provide equal load distribution, it withstands heavy shock and reversing loads over long periods.

For all the precision and performance you need and can use in non-critical applications, ask a nearby Rollway Service Engineer to brief you on Rollway Tru-Rol characteristics and versatility.

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SYRACUSE, NEW YORK

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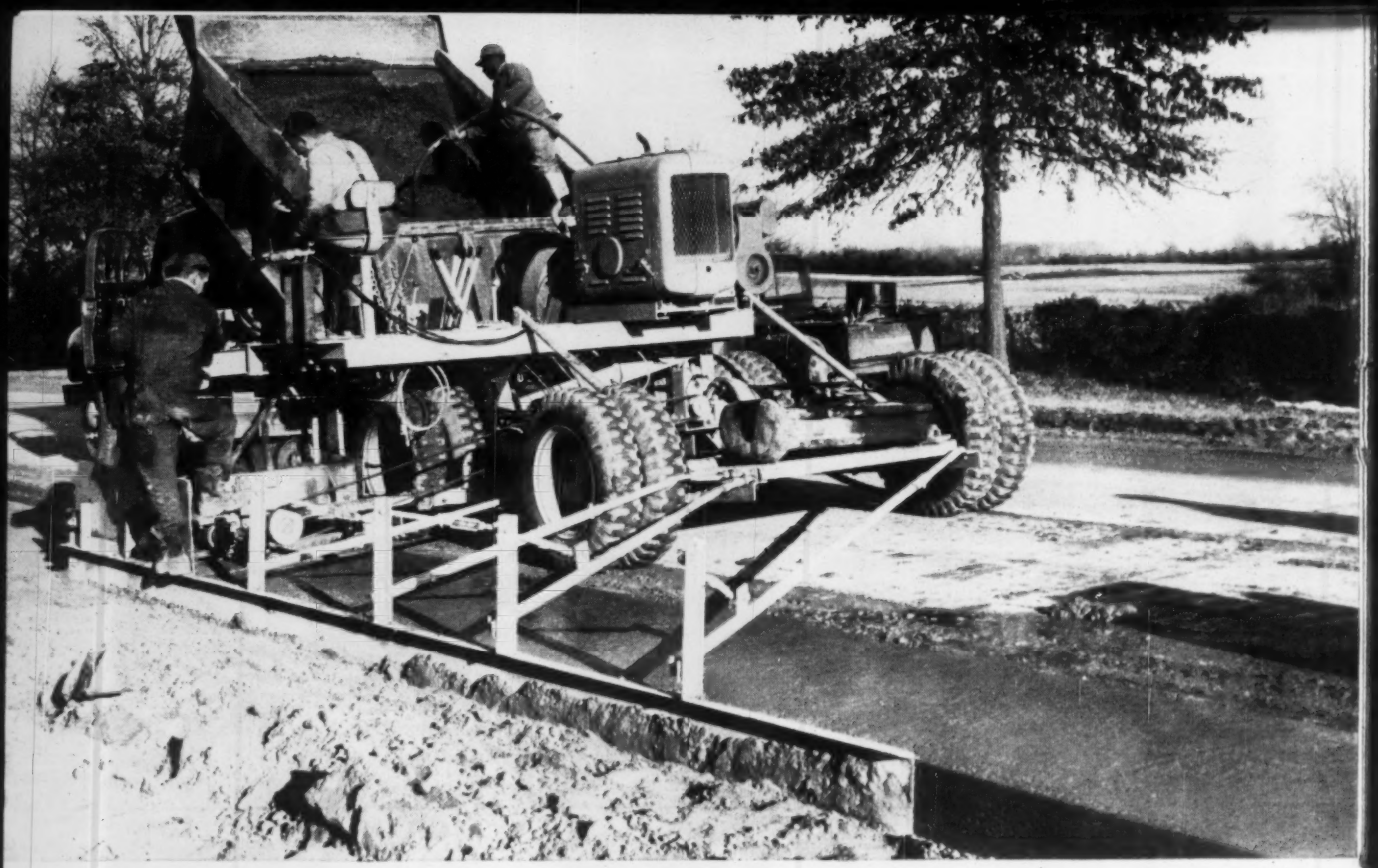


Blaw-Knox slip form Widener at work on DuPont highway outside New Castle, Delaware. The contract, let by Delaware State Highway Department, calls for widening a 6¼ mile stretch of roadway from 20 to 24 feet. Bituminous Mix will be used for resurfacing.

Blaw-Knox slip form Road Widener places 72 yards of low slump concrete per hour on Delaware job

New slip form attachment eliminates setting of forms

"This Blaw-Knox Road Widener made it possible for our 14-man crew to complete this project in seven days. Without it we would have used the conventional method of widening – the setting of forms – which would have greatly increased the man-hour requirements. As it was, we finished the 6¼ mile stretch in seven days," says Webb Blevins, Job Superintendent, Wilson Contracting Company, New Castle, Delaware.

Plenty of power was demonstrated when the Blaw-Knox Road Widener pushed a 16-ton load up a considerable grade with "absolutely no loss of speed," Mr. Blevins adds. "Using the Blaw-Knox Road Widener, we placed 15 feet of 4 feet wide – 8 inch thick concrete every minute."

Engineered Blaw-Knox equipment such as the Road Widener, built for heavy duty performance is helping contractors everywhere to slash costs and build profits on construction jobs. Your Blaw-Knox distributor can give you all the details on the Model 95 Widener. If you would like a technical report on Wilson Contracting's experience, ask your Blaw-Knox distributor for a copy, or write the factory. No obligation of course.

BLAW-KNOX

BLAW-KNOX COMPANY

Construction Equipment
300 Sixth Avenue
Pittsburgh 22, Pennsylvania

Cartographic Aid

Army engineers develop, test high accuracy, high speed grid-ruling machine

A cartographic grid-ruling instrument that can rule high accuracy rectangular grids, suitable for field use in compiling maps, has been developed by the U. S. Army Engineer Research and Development Laboratories, Fort Belvoir, Va.

The instrument was designed to shorten the time of drafting map grids while increasing the accuracy of the constructed grids at the same time. To reduce the levels of skills needed by the operator, the design has been such as to achieve simple operation. And one man can put it together or take it apart.

The beam weighs about 50 lbs with the combined weight of grid-ruler and carrying case amounting to 120 lb. The beam, cast from high strength aluminum, is 61 in. long and has four stainless steel inserts to act as bearing surfaces and tracks for the carriage. The carriages act in turn both as pivot points for the links and as housing for indexing verniers.

The instrument, built under contract to the Laboratories by the Union Instrument Corp., Plainfield, N. J., now is being service tested.

Eye to the Future With Hydraulic Mining

Since many a coal mining idea has in the past seen application in construction, current experimental work in hydraulic mining is worth keeping an eye on. It is being undertaken by the British National Coal Board in Treharris, Glamorgan, in Wales.

High pressure ¾ in. water jets operating at 1,200 psi will be used to break the coal from the face and float it to a collection point. The coal will flow down an open channel to a screen where all sizes larger than ¾ in. will be separated and transferred to a conveyor belt system. The remaining slurry will be pumped to the surface, where the water will be clarified and recirculated. The goal is to eventually pump all the coal to the surface.

Advantages of hydraulic mining according to the NCB are:

Increased output; simplification of underground equipment; power plant can be located at surface; no explosion danger.

The jet requires only four men for its operation—making the procedure even more economical.

At present it is not known what size fragmentation will be achieved by the jet. It is believed that additional fragmentation, using the jet, will be needed after the coal has been removed from the face.

At Treharris, the headings already have been driven and the jets will work on the pillars in such a manner as to use the slope of the area to assist the collection. Trials will be conducted over a six month period at a cost of about $13,000.

Radioactive Gold to Seek Silting Patterns in Bay

Radioactive gold will be sprinkled into the muds of San Francisco Bay to see if it will help trace shifting silts that clog the Bay's ship channels.

Ten samples of gold will be mixed in several barrels of silt and the material dumped in the path of the moving mud. A scintillation detector will check the water surface and trace movements of the silt to find out how fast, where, and how far it moves.

Gold was chosen because it could reliably label the sediments without affecting their behavior and because its short half-life would not contaminate the bay.

About 6 million cu yds of silt annually pour into the bay from the San Joaquin and Sacramento Rivers. It costs about $1 million a year to dredge the ship channels clear.

The experiment was supposed to take place the end of June but was postponed when the gold—with a half-life of only three days—was delayed in shipment from the atomic facility at Oak Ridge, Tenn., and arrived useless for the test.

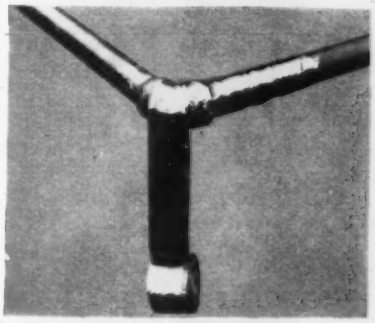
The San Francisco District of the Corps of Engineers and the University of California are conducting the gold dust research.

Dutch Will Give Course In Hydraulic Engineering

A year-long international course in hydraulic engineering will be given at the Delft Technological University in Holland. The course will be divided into three programs covering tidal and coastal engineering, reclamation, and rivers and navigation works.

To enable students to meet conditions peculiar to their own countries, a combination of subjects from the three branches may be taken. Tuition for the course, which starts in October, will be about $316. English will be the language used.

For True Economy... MEASURE PIPE PROTECTION WITH A CALENDAR!



Why Engineers Specify TAPECOAT ...The Quality Coal Tar Protection in Handy Tape Form for

Pipe	Tanks
Pipe Joints	Insulated Lines
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Fittings	Sprinkler Systems
Conduit	Bridge Crossings
Cables	Tie Rods

. . . in underground or under-water service

Since 1941, TAPECOAT coal tar coating in tape form has proved itself the best possible protection at lowest possible cost. Pipe and other surfaces TAPECOATED 17 years ago show no signs of deterioration—a record unmatched by any other type of tape.

Field application costs are lower with TAPECOAT because it is so easy to apply with the use of a torch. No tar kettles, technical know-how or special crews are required. TAPECOAT comes in rolls of 2", 3", 4", 6", 18" and 24" widths—sized to the job.

A TAPECOAT sales and service engineer is available at all times to assist you on any corrosion problem and on the various applications of TAPECOAT.

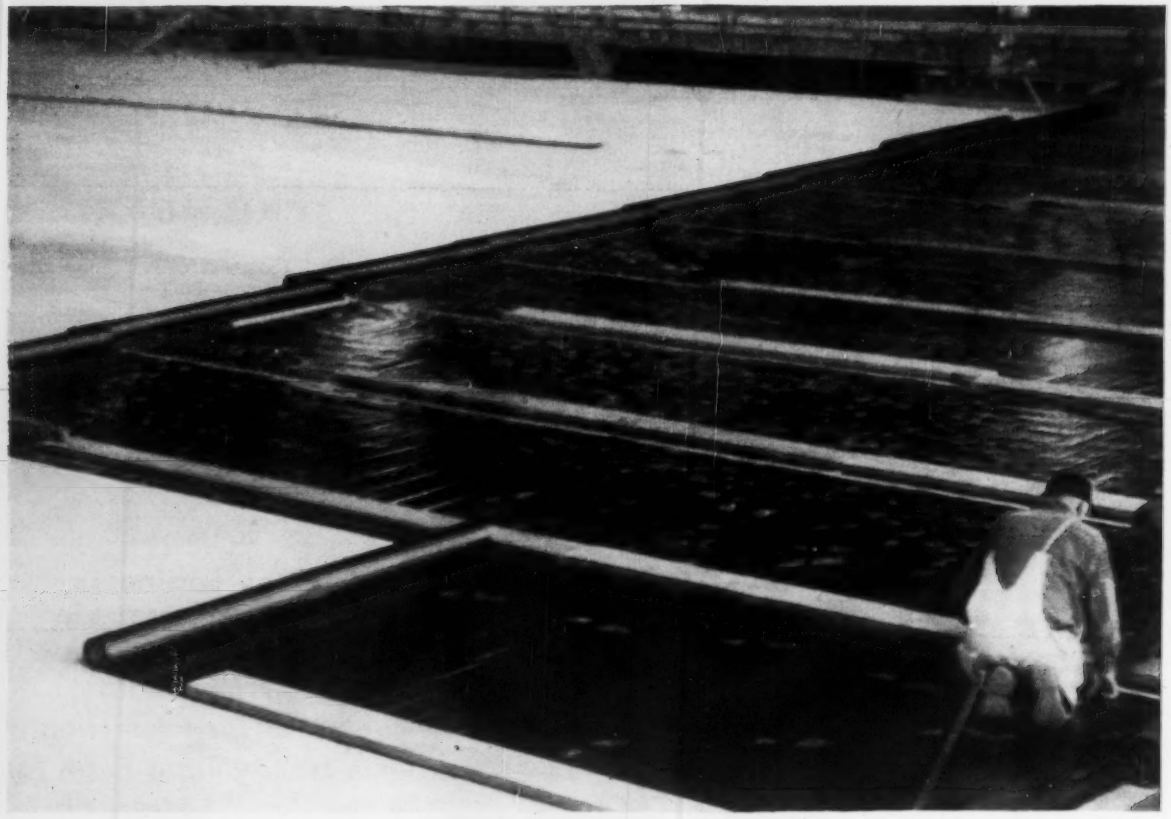
Write for illustrated brochure.

The **TAPECOAT** *Company*

Originators of Coal Tar Coating in Tape Form

1551 Lyons Street
Evanston, Illinois

Representatives in Principal Cities



DRY...FOREVER!

MOISTOP Under Concrete Slabs Prevents Upward Passage of Moisture Through Floors!

If you want a vapor barrier that prevents moisture migration *permanently* — without question — Moistop is your product!

Moistop has all the lasting advantages of polyethylene film combined with the strength of tough, waterproof Sisalkraft for tear-free, fast application.

Moistop gives commercial and residential construction unparalleled moisture-vapor protection when applied under slabs, under basement floors and in crawl spaces.

The cost? Less than 3½¢ per sq. ft.! Available in rolls of 72", 84", and 96" at your building materials supplier.

NOTE: More and more builders are using Moistop also as a low cost concealed flashing.

AMERICAN SISALKRAFT CORPORATION

Chicago 6 • New York 17 • San Francisco 5

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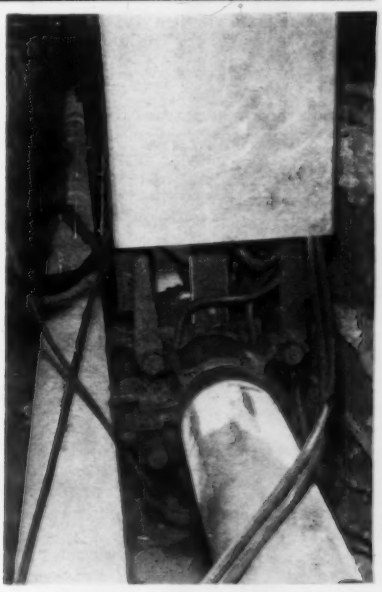
SISALKRAFT PRODUCTS ARE AVAILABLE IN CANADA THROUGH ALEXANDER MURRAY & CO., LTD., MONTREAL

AUTOMATIC ELECTRIC WELDER is moved to pipe joint by boom.



BUTT WELDS are completed in 1½ minutes.

Faster Butt Welding Speeds Pipelaying

Automatic equipment incorporating a new process for butt welding steel pipe in the field has been developed. The process employs induced high frequency electric current.

The build-up of metal, or bead, in the resulting weld occurs around the outer periphery, while the internal diameter at the joint remains full pipe size. There are no problems of removing flash or slag nor extraneous weld metals according to the manufacturer.

Hydraulic clamps are attached to the two steel pipe sections and exert from 2,000 to 4,000 psi, depending on wall thickness. Argon gas is sprayed around the weld area at the time of the weld to create as nearly as possible an inert pocket to keep atmosphere away from the butt edges.

A weld can be made in 1½ minutes, compared to an hour or more for butt welding a joint with conventional equipment. The new equipment also features automatic shut-off current when the weld is completed.

For the generation of high frequency current, a 100 kw single-phase 10,000-cycle-per-second electric generator driven by a diesel unit is used. Both units are cooled by a circulating water system. A standard control unit containing the necessary meters, timers, capacitors and protective devices is used to regulate the output required to heat the various sizes of pipe.

This process is the result of two years of experimental research sponsored by Consolidated Edison Co. of New York City and carried on in the laboratory and field.

The first unit that was assigned to the field has produced several hundred welds. It is assembled on a 7½ ton Army surplus trailer. An 18 ft boom carries the output transformer, work coil, pipe alignment jig and hydraulic clamps so that welding can be accomplished in trenches, on the ground or overhead.

The unit can be moved from joint to joint along pipe laid either in a trench or on the ground. This method permits four or more welds an hour, the number of welds being contingent upon moving time from joint to joint.

An even faster method may be used when feasible. The welding equipment is stationary and the pipe is pulled through the machine on a special line-up table. As soon as weld is completed, the pipe is pulled along and the next section placed in position for welding. This will permit 10 or more welds per hour.

In long straight runs, two units can be used at the same time, leapfrogging joints.

Pipe up to 14 in. dia now can be welded with this equipment, but welders for larger size pipes are still in the development stage. New Rochelle Tool Corp., 320 Main St., New Rochelle, N. Y.

Dustless Rock Drill Breathes in Dust

A dustless rock drilling system features air drills that eliminate hole blowing, water nuisance and dust hazards by sucking rock chips and dust through a hollow steel bit into dust extracting tanks.

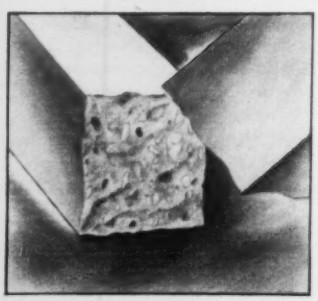
The dustless air drill system, approved by the U. S. Bureau of Mines, is designed in three drill and extractor combinations: the Thor 390-DL-250 automatic push feed system, the 75-DL-250 sinker system and the 15-DL-50 utility system. The selection depends on rock to be drilled and dust capacities.

Instead of sending a stream of air or water into the hole, the dustless drills reverse the flow of air, using suction to take in rock cuttings into the bit face and through the steel and drill at a velocity said to be close to the speed of sound. Cuttings and dust are discharged through a lightweight hose at the back of the drills into dust extractors where the air is cleaned. Thor Power Tool Co., Prudential Plaza, Chicago 1, Ill.

(New Products continued page 78)

On the Illinois Toll Highways—every ...concrete never oxidizes!

PORTLAND CEMENT



Fracture test demonstrates concrete's unequalled bond strength. Cement binder holds so tightly that break is through the aggregate itself. In contrast, binder in flexible pavement loses its grip, break occurs *around* the aggregate.

mile in CONCRETE

50 years' life and more . . . maintenance costs up to 60% lower than for flexible pavement . . . this is what Illinois can expect on these vital new concrete tollways.

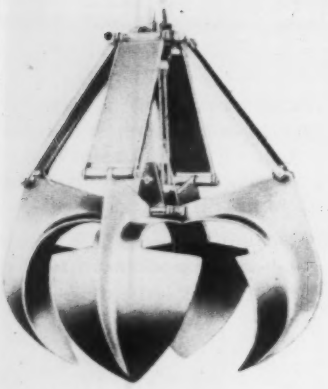
187 more miles of concrete for Illinois—one of America's heaviest traffic states! Behind the choice was Illinois' experience with concrete on 11,600 miles of highways. Efficient, low-cost performance comes from the very nature of concrete. One example of this: concrete can't oxidize . . . there is never any adverse chemical reaction to sun, cold, air or moisture. So it doesn't dry out, lose strength and need expensive surface build-up treatments every few years. In fact, concrete actually gains strength—up to 20% in 5 years.

Add superb riding smoothness—and it's easy to see why modern concrete is the preferred pavement for Interstate highways and other heavy-duty roads.

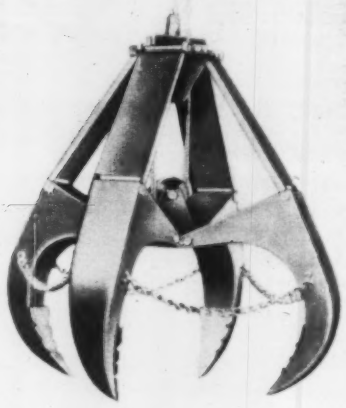
ASSOCIATION *A national organization to improve and extend the uses of concrete*

FOR HIGHWAYS WITH A SOLID FUTURE...

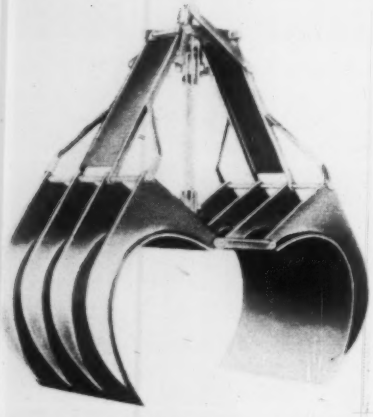
Concrete



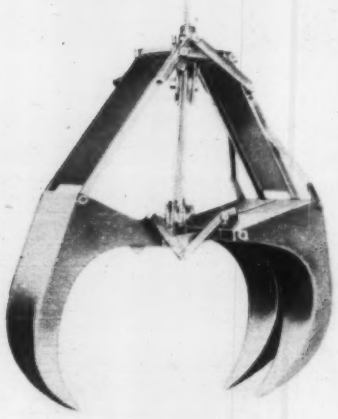
1 Four-leaf orange peel



2 Four-time grapple



3 Stacked wood grab



4 Log-pole-stone grab

Four Buckets Handle Tough Jobs

A series of grabs, grapples, and orange peel buckets for handling pulp wood, logs, stumps, rock, rip-rap, boulders, scrap metal and other hard to handle materials has been added to the Erie Strayer Co. line.

Says the company's sales manager: "We have researched this field for a long time and we've come up with what we think are perfect running mates for the rest of the Erie Strayer line. Any crane equipped to handle clam shell buckets can handle Erie grapples."

Some of the features of the four buckets include heavy welded construction; oversized pins and bushings; recessed Alemite grease fittings; up to four part reeving on large, cast steel sheaves; positive socket and wedge attachments for cable.

One unit in the new series—a three-pronged interlocking type of rock, stone and log grab is built to handle tree-length logs from 18 to 100 in. in diameter, and to carry loads of from 1 to 25 tons. Erie Strayer Co., Bucket Div., Erie, Pa.

Portability Is Featured In Asphalt Tool Heater

A small and easily handled asphalt tool heater has been developed to take the place of a larger and more expensive fire wagon.

The heater holds two irons and will heat these irons in a third to half the time usually required, claim the manufacturers. Small size and light weight portability make it easy to move and use when there are a number of patching jobs daily. Cost is about ⅛ that of trailer type tool heaters.

The heater can be operated on the ground, on the floor of a truck, or permanently mounted in the truck. A split flame LP gas burner heats both smoothers at the same time; a 20 lb bottle will operate the heater for two days. Carrying handles slide underneath the heater when not in use. A wheel model has casters and handles for pushing and pulling instead of carrying. Over-all dimensions of the heater: 20 in. x 18 in. x 16¼ in. Hauck Manufacturing Co., 124-36 Tenth St., Brooklyn 15, N. Y.

Fork Lifts Made for All Michigan Tractor Shovels

New fork lift attachments are designed for on-the-job rapid installation —with no need to alter hydraulic connections.

Forks are heat-treated steel with a one-piece forged tine—the fork carrier being of structural steel. Capacities vary from 4,000 lb at 24 in. from heel of fork on the 1¼ yd Model 75A tractor shovel to 15,000 lb on the 6 yd Model 375A. Construction Machinery Div., Clark Equipment Co., Pipestone Road, P. O. Box 599, Benton Harbor, Mich.

Portable Aggregate Plant Used As Low Cost Batcher

A low cost batching unit is available in a portable aggregate plant. The basic 5 cu yd batcher, with or without high capacity conveyor, will give a low-price batching unit for front-end-loader-charging. The unit is complete with dial scale to let the operator make visual checks of accumulated weighing.

By adding a bolt-on 30-ton surge bin, charging time is cut and capacities increased to as much as 100 tons per hr., say the manufacturers. Beam scales are optional. With pneumatic tired trailer wheels and towing hitch, the Nomad portable plant is quick and easy on the move. Engineered Equipment, Inc., 1001 Linden Ave., Waterloo, Iowa.

A-W Tandem Roller compacting base for asphalt road at Dayton, Ohio. Owned by Earl D. Creager, Inc.

"Our A-W Tandem is doing an excellent job..."

—Earl D. Creager, Inc.

Earl D. Creager, Inc., is a general contracting firm in Dayton, Ohio, which does a considerable amount of road and highway construction work. The company owns about $1,000,000 worth of equipment, in 1956 grossed more than $3,000,000. In May 1957 it purchased a new A-W Tandem Roller.

Earl D. Creager, president, says: "We made our decision to buy an Austin-Western after looking the market over very carefully. Precision and dependability were our main concerns, and the A-W seemed to fill the bill best.

"Our operators tell us that the machine gives exceptionally smooth and steady performance. Also that its full visibility, convenient dual controls, and hydraulic steer make finish grading easy. All in all, we feel that our A-W Tandem is doing an excellent job and we are sure that we put our money into the right machine."

A-W rollers are available in these models: tandem (5 to 14 tons), portable tandem (3½ to 6 tons) and 3-wheel (8 to 14 tons). Get all the facts from your nearby A-W distributor or write to us.

Austin-Western CONSTRUCTION EQUIPMENT DIVISION, AURORA, ILL.

BALDWIN · LIMA · HAMILTON

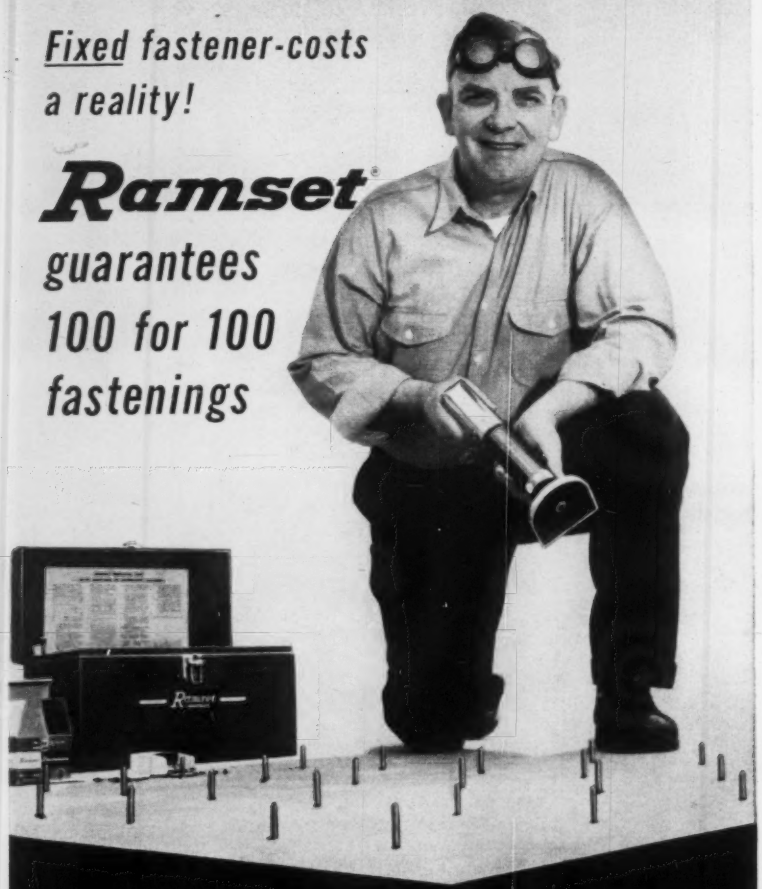
Power graders • Motor sweepers • Road rollers • Hydraulic cranes

BALDWIN BLH LIMA-HAMILTON

Fixed fastener-costs a reality!

Ramset®

guarantees 100 for 100 fastenings



"The Boss is a happy man since we started using RAMSET."

On any approved job, RAMSET replaces any ineffective fasteners free. As a result, fastener costs are fixed . . . you pay only for the number of fasteners called for on the blueprint.

"The Boss isn't the only one who makes out. I've put down as many fasteners as the next guy, but never easier and never has my work looked better. This tool makes the job a snap . . . light, fast, handles good . . . no duds, no drilling, no sweat."

For more than 10 years, the RAMSET Powder-Actuated Fastening System has proved itself fast and sure on jobs in concrete and steel. The tool is easiest to use, the fasteners the best you can buy. Austempering enables them to perform where other fasteners fail. And RAMSET specialists are on call to give you the answer to any fastening problem, right on the job.

If fastening to steel or concrete is your problem, check into the Ramset Fastening System today! Call your Ramset dealer (under "TOOLS" in the Yellow Pages) or write us direct.

Ramset Fastening System

WINCHESTER-WESTERN DIVISION

OLIN MATHIESON CHEMICAL CORPORATION

Lightweight Body Made For One Ton Truck Size

The Twin Yard Bird is a lightweight dump body made especially for 1 ton truck chassis. Constructed of 12 gage steel, this body does away with costly half loads on larger trucks. Quick loading and precised dumping are outstanding features of the body.

An 8 ton capacity twin head high pressure hoist is provided for increased stability, strength and lifting power.

Lengths of 8, 9, and 10 ft are available for the bodies—all in 78 inch widths. Each body length has a 3 cu yd or a 4 cu yd capacity, as required. W. C. Hayes, Anthony Co., Streator, Ill.

. . . New Product Briefs

• **Concrete vibrator**—A lightweight, 25 lb vibrator called the Lightning is equipped with a ¾ hp electric motor. The manufacturer says it will deliver maximum power even when equipped with a 24 ft drive shaft. A variety of heads and drives may be used on a fast change basis without special adaptors. White Manufacturing Co., Elkhart, Ind.

• **Glass fiber insulation**—This efficient, lightweight insulation blanket has been developed for exterior application to metal ducts. Reported characteristics include densities from 0.50 to 2.0 lb/cu ft and thermal conductivity of only 0.25 Btu/sq ft per hour through 1 in. material at 100F. The mat blankets are available in thicknesses of ½ to 4 in. and widths from 18 to 72 in. Ehret Magnesia Manufacturing Co., Valley Forge, Pa.

• **Cold weather curing**—Two new concrete curing covers are available. One, called Burlene, is a combination of burlap for strength and Visqueen (polyethylene) film for vapor seal and comes as a sheet. The other, named Maka Insulated Concrete Curing Blanket, is made of 1 in. or 2 in. Fiberglas encased in Visqueen film. The manufacturer reports that the Maka Blankets were

A PUMP IS MEASURED BY MORE THAN DIMENSIONS

MORRIS Centrifugal PUMPS

for Rugged, Dependable,

Trouble-Free Operation

You get more from a Morris Pump than just correct "book design" measurements.

Built-in extra stamina to give outstanding performance even under adverse conditions.

Superior quality of material and proved hydraulic design assures longer life and continued dependability in all Morris Centrifugal Pumps.

Morris has a modern, well-instrumented slurry laboratory to solve, in advance, problems that may be encountered in a particular pumping application.

When you have a pumping problem . . . consult the Morris representative. He is well qualified to advise you in your pumping problems.

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PUMPS

MORRIS MACHINE WORKS **BALDWINSVILLE, N. Y.**

Sales Offices in Principal Cities

Export Office: 50 Church St., New York 7, N. Y.

Timber Chasers

by R. G. LeTOURNEAU

Did you ever see logs being hauled to the mill? Most of them are *big*, and they're *heavy*. It's a big problem in the logging industry to get those logs out of the deep woods to what they call "landings", where the logs can be loaded out on trucks or rail cars.

Machines have to do the job. What you need is a machine that can scamper through the woods with a big load and never mind the kind of ground it has to run on. And remember, too, you have to keep your operating costs low.

We build what many consider to be the best machine on the market for this job, and actual work records back up such a claim. It's called the Electric Arch.

When you see it at work, you'll realize why it's called an Arch. It's a powerful rubber-tired tractor built with a heavy frame that sticks up high in the air at the back, holding up the ends of 25 to 30 tons of logs. The other ends of the logs drag on the ground. This way more than half the weight of the logs is carried by the machine, so not too much has to drag along the ground.

While the Arch normally travels only from a quarter of a mile up to three miles each way, it has to maneuver like a snake through the woods — dragging those heavy loads on the roughest kinds of trails over everything from rough rocks to soupy footing.

In operation like this, you can see that every ounce of traction really counts.

And traction is where our Electric Arch really shines. Unlike a lot of other machines, this one has full power and traction *under* the load ... where you need it, for all four wheels are driving wheels, even when they're steering.

Diesel electric power, generated right on the Arch, turns powerful electric motors in the wheels. And when one of the wheels hits slippery footing, the power that it can't put to use automatically transfers to the other wheels.

Even the brakes are electric. There aren't any friction surfaces to wear out. Electric power holds back the Arch with its full load of logs on the steepest grades — and does it surely and safely all the way down. That saves a lot of money on brake maintenance.

The Electric Arch we build for loggers is a good example of the various kinds of machines we manufacture.

They're all big and tough. They're designed to do specific jobs quicker, easier and cheaper than run-of-the-mill smaller machines. And there's many a business or industry where one of our machines could be a big factor in speeding operations and cutting costs. You may have a problem that we can help solve ... if you'll get in touch with us we'll be glad to help.

R. G. LeTourneau

R-109

R. G. LETOURNEAU INC

2728 SOUTH MAC ARTHUR
LONGVIEW, TEXAS

. . . New Products

laid on fresh concrete with outside temperature at 3F while slab temperature of 38F was maintained for four days without heat. MAX KATZ BAG CO., 312 S. NEW JERSEY ST., INDIANAPOLIS 4, IND.

• **Roof vent flashing**—A one piece neoprene roof vent flashing now is available. Only a non-hardening caulking compound is needed to complete the simple installation. The collar and flange flashing is available in a variety of sizes and pitches. MONARCH RUBBER CO., 584 LINCOLN PARK, HARTVILLE, OHIO.

• **Plastic nail**—A skewer made of polystyrene plastic is made for use in erecting foamed plastic insulation and corkboard. The skewers reportedly have great holding power because of an arrowhead tip and oversized head. ARMSTRONG CORK CO., LANCASTER, PA.

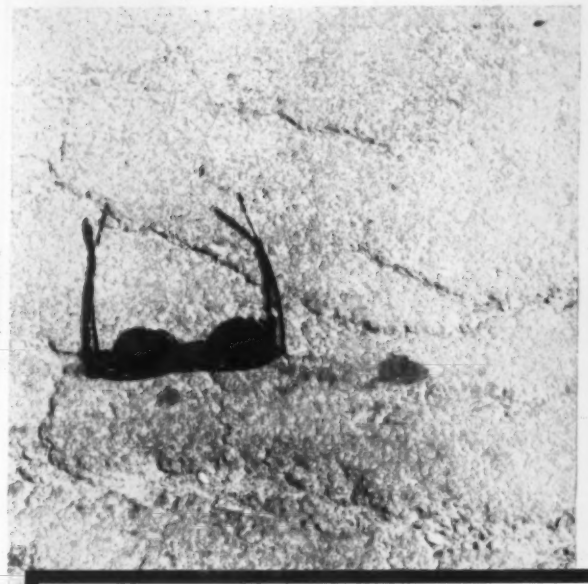
• **Automatic sunshade** – Photoelectric roof controls are used to regulate the angle of large sunshades developed for buildings in high temperature areas. The equipment reportedly allows substantial savings in air conditioning costs and more scope in design of structures exposed to long periods of direct sunlight. UNIVERSAL CORP., DALLAS, TEX.

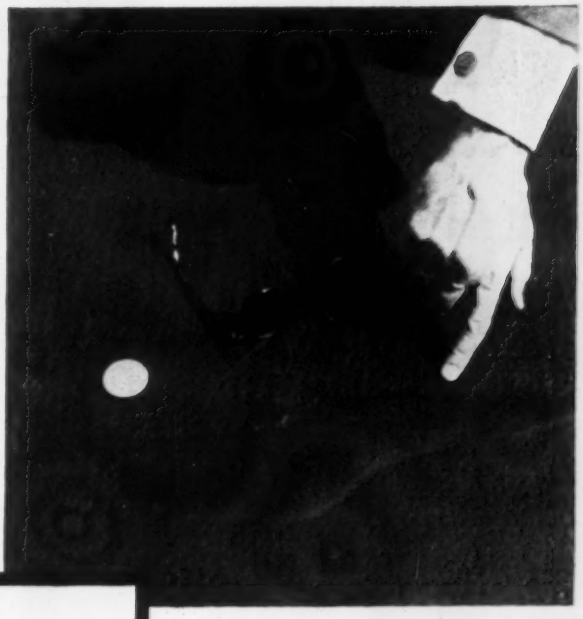
• **House paint**—Seven years of research and field testing have gone into the development of an Isophthalic-based alkyd resin paint. The manufacturer reports that the new paint adds at least two years to the life of house paint. Furthermore, houses painted seven years ago still show the brightness that most paints lose after several months. ORONITE CHEMICAL CO., 200 BUSH ST., SAN FRANCISCO, CALIF.

• **Round fiber forms**—"Econ-O-Mold" is the name of a new low cost concrete form designed for single use applications such as underpinnings, quarter, half and around columns. DESLAURIERS COLUMN MOLD CO., INC., 5036 W. LAKE ST., CHICAGO 44, ILL.

• **Concrete surfacing**—"Certified Superset Styrroid" is the name of an emulsion containing several synthetic rubbers to be used in combination with sand and Portland Cement for resurfacing old concrete in thicknesses from $\frac{1}{8}$ to $\frac{1}{4}$ in. UNITED LABORATORIES, INC., 16801 EUCLID AVE., CLEVELAND 12, OHIO.

• **Liquid-tight wireways**—A new line of hinged-latched-cover wireways, said to be liquid proof, is offered for use where oil, dirt, dust and water are a menace





BITUMULS SLURRY SEALS ARE REAL LIFE SAVERS*

For Pavements in Rochester, New York

*By permission of Beech-Nut Life Savers, Inc., for candies

LEFT: A typical section of pavement to be treated with Bitumuls Slurry Seal in Rochester.

RIGHT: The same pavement section after treatment with Bitumuls Slurry Seal. (Note how the crack in the foreground has been sealed).

The City of Rochester, New York, was faced with a problem common to many communities today: keep all streets maintained in serviceable condition; yet do it at a cost that will permit the complete replacement (out of Maintenance Department funds) of many miles of streets that are over-aged.

Problem: How can you keep overall maintenance costs low enough to permit planned replacement of certain streets?

Answer: Bitumuls Slurry Sealing . . . a "life saving" technique for keeping distressed pavements in "good working order". Streets that were badly oxidized, cracked and open-textured due to a combination of age, heavy traffic, and winter weather were readily rejuvenated by the sealing, crack-filling and void-filling properties of Bitumuls® emulsified asphalt slurry.

Bitumuls Slurry Seals actually provided a holding action against wear and weather at extremely low cost. Savings over former methods were pronounced because very-costly winter patching of chuck-holes was completely eliminated. As a result, expenditures for repair and control of winter damage were **reduced by almost seventy percent!**

The money thus saved was diverted to reconstruction of streets that were beyond maintenance or repair.

Bitumuls Slurry Sealing is normally . . . and should be . . . regarded as only a **temporary treatment** for distressed pavements. Adequate repairs or pavement-replacement must eventually be made. Yet it is truly a "Life Saver", since it seals, protects and preserves any basically sound pavement against further deterioration until such a time as major repairs can be made, or the pavement can be replaced.

Typical view of the high-speed, high-efficiency Bitumuls Slurry Sealing in Rochester.

Your community, too, can benefit from the use of Bitumuls Slurry Seals. For further information on Slurry Sealing . . . or for the complete Bitumuls/Life Saver story . . . call our nearest office.

American Bitumuls & Asphalt Company

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Cincinnati 38, Ohio
Atlanta 8, Ga.
Mobile, Ala.
St. Louis 17, Mo
Tucson, Ariz.
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Oakland 1, Calif.
Inglewood, Calif.
San Juan 23, P. R.

MASONITE
MAKES THE NEWS
WITH *Concrete Form* PRESDWOOD

Frances Cabrini Housing Project, Chicago, Ill., Architect: A. Epstein & Sons, Chicago; General Contractor: Sumner Sollitt Co., Chicago; Form Contractor: Adjustable Forms, Inc., Minneapolis, Minn.

23 years of cutting costs for PHA

Back in 1935, Masonite® Concrete Form Presdwood® was used in forming concrete at Techwood, Atlanta, the first Public Housing Administration project. At the recently completed Frances Cabrini Housing Project in Chicago, the contractor lined his forms with panels of the same smooth, dense material.

Today, as it was 23 years ago, Concrete Form Presdwood is the most economical way to a smooth-finished surface. It resists damage from rough handling. It has no knots or grain; edges will not splinter. The screen side leaves a stippled concrete surface, providing an excellent bond for paint or texture for rubbing. It can be used again and again. Concrete Form Presdwood's low initial cost makes it practical to replace panels cut up by mechanical tradesmen.

Send the coupon for a free specification booklet. Or see your building materials dealer.

MASONITE

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Please send me a free sample and your specification booklet on Masonite Concrete Form Presdwood.

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Zone.....*County*.....

®Masonite Corporation
...manufacturer of quality panel products.

to electrical wiring. Made to the electrical specifications of the Joint Industry Conference Standards, the wireways are available in a variety of standard sizes and lengths with accessories. Basic construction is 14 gage steel with a corrosion-resistant gray baked enamel on a phosphate coated surface. KEYSTONE MANUFACTURING CO., 23328 SHERWOOD ROAD, WARREN, MICH.

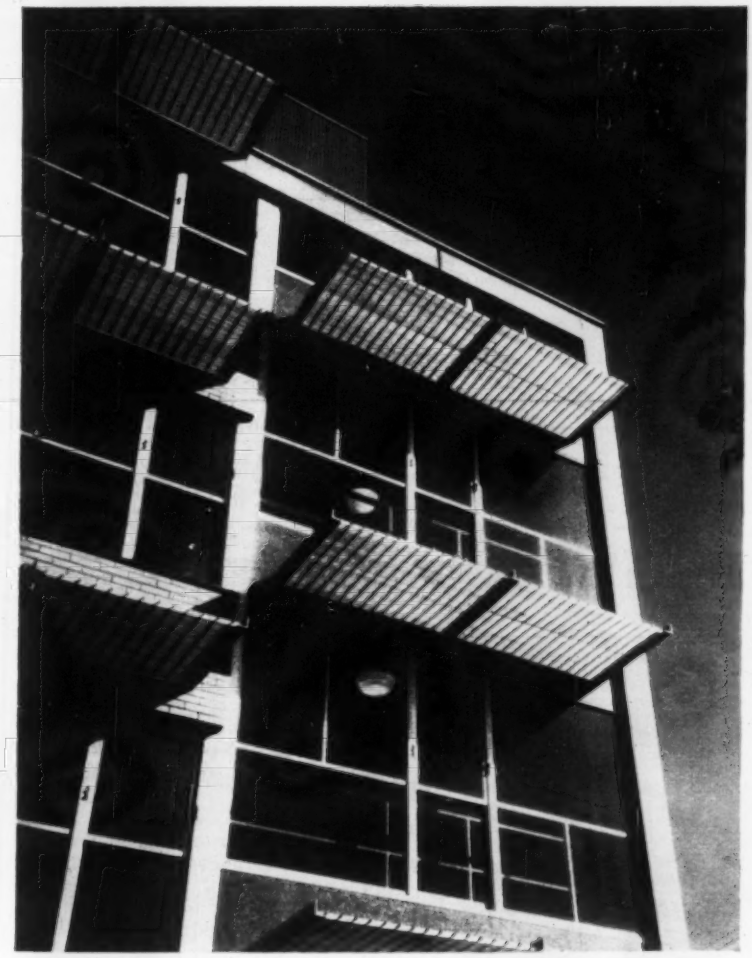
• **Side lap fastener**—A grommet type fastener has been developed for securing the side laps of plastic sheet or light gage sheet metal. The Lap-Lox is installed from the weather side, eliminating the need for underside scaffolding, the manufacturer reports. The unit consists of an assembled hex bolt, with two sealing washers, a rubber sleeve and a nut. When the assembly is tightened, the rubber sleeve forms a positive, waterproof seal and lock. FABRICATED PRODUCTS, INC., WEST NEWTON, PA.

• **Door opener**—An electronically-controlled door operator uses hydraulic power both to open and close the door. Completely concealed in the floor, it can be operated by floor mat, button switch or overhead chain switch. A safety tripper stops the door when a person steps on the safety mat installed on the swing side. OSCAR C. RIXON CO., 9100 W. BELMONT AVE., FRANKLIN PARK, ILL.

• **Curing machine**—A new concrete curing compound spray machine for highway construction automatically synchronizes the spray stroke to match the speed of the wheeled machine's travel. The assembly reportedly saves up to 25% in compound consumption yet produces a uniform coating to meet any specification. CONCRETE MACHINERY LTD., 9530 E. RUSH ST., EL MONTE, CALIF.

• **Two new welding wires**—Inco-Weld "A" wire is designed especially to give high-quality automatic and manual inert-gas welds in 95% of the dissimilar metal combinations that industry encounters. Incor-Hard "1" is an electrode for hard-surfacing steel or cast iron equipped with a 15 hp gasoline engine, and abrasion. THE INTERNATIONAL NICKEL CO., INC., 67 WALL ST., NEW YORK 5, N. Y.

• **Push-pull test loader**—A 150,000 lb capacity testing machine has been developed incorporating a screw-and-ball loading mechanism. The manufacturer points to several operating advantages resulting from the machine's design. They are positive head positioning, constant or variable head speed, and the



MODERN DESIGN CALLS FOR FUNCTIONAL BEAUTY

Architects & Engineers are more and more discovering the many ways in which IRVICO grating can be used to solve problems of modern design.

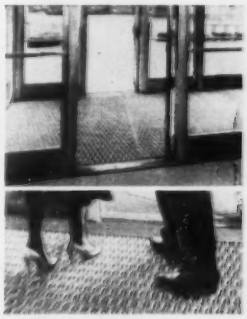
Grating is clean and simple. It gives practical advantages without sacrifice to good looks. In many cases it enhances the architectural effect.

★

HERE ARE TWO EXAMPLES
WHERE IRVICO GRATING
HAS GIVEN
FUNCTIONAL BEAUTY
TO MODERN ARCHITECTURE

★ Curtis Hall, Temple University, Philadelphia
Nolen & Swinburne, Architects

SUNSHADES of standard panels of IRVICO aluminum grating reduce cooling costs and add handsome "transparent" appearance to this four-story classroom building. The open mesh won't trap hot air next to glass. Grating panels are strong enough to be used as window cleaning walkways. They provide a permanent, practical solution to the problem of sun control.



★ Angell Hall, University of Michigan
Kahn Associated Architects and Engineers, Inc.

Vestibule mats of Irving grating prevent excessive grit, mud and wetness from being tracked into corridors. Grit, rain, snow and slush drop through the open-mesh grating to receptacles below which can then be flushed into sewers. Thus a clean entrance is always assured, and the cleanliness of the interior is in turn preserved.

"A Fitting Grating for Every Purpose"

Consult local classified telephone directory in principal cities for nearest Irving Sales Engineer (or request AIA No. 14P20 directly).

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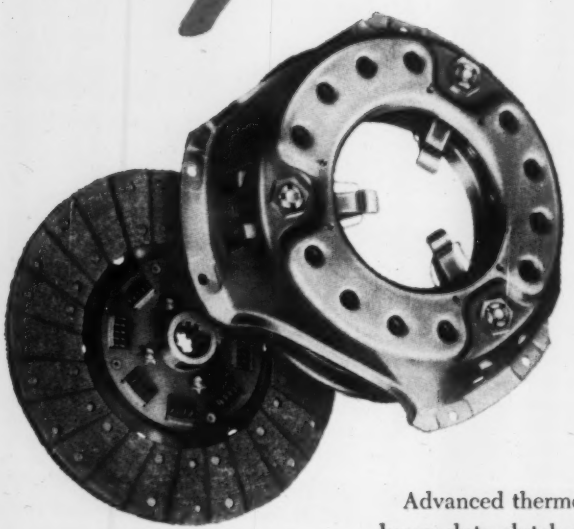
DIRECT PRESSURE CLUTCH



Vital component in today's most economical system of power transmission, the Lipe DPB Heavy-Duty Clutch costs less by itself . . . materially reduces the sales price of the truck . . . and affords substantial savings in over-all truck-operating costs per mile.

Other elements of the power-train contribute to these savings, but the Lipe DPB Heavy-Duty Clutch absorbs the greatest shocks and fiercest friction, dissipates the most heat, and by its simplicity, direct drive, easy adjustment and replacement-exchange, keeps the vehicle rolling with less cost for fuel, brake relining, oil replenishment and repair. Its worth in highway safety and preventative brake maintenance alone places it far in advance of costlier and more complicated drive components.

Advanced thermodynamic design and positive air circulation add up to a heavy-duty clutch of uncomplicated design with few moving parts. In short, it's a clutch with a low maintenance cost that matches both its low first cost and greatly lower truck-mile costs of operation.

● Now available in 12", 13", 14", 15" single plate and two-plate models. Write for complete information.

LIPE ROLLWAY

Lipe-ROLLWAY CORPORATION
SYRACUSE 1, N. Y.

MANUFACTURERS OF AUTOMATIC CLUTCHES AND MACHINE TOOLS

ability to apply tension, compression or alternating loads to specimens. Drive power is supplied by a 5 hp ac motor. Testing space in the standard model is 30 in. wide and 48 in. high. The machine consists of separate loading and control units for ease of installation and operation. ELECTRONICS & INSTRUMENTATION DIV., BALDWIN-LIMA-HAMILTON CORP., WALTHAM 54, MASS.

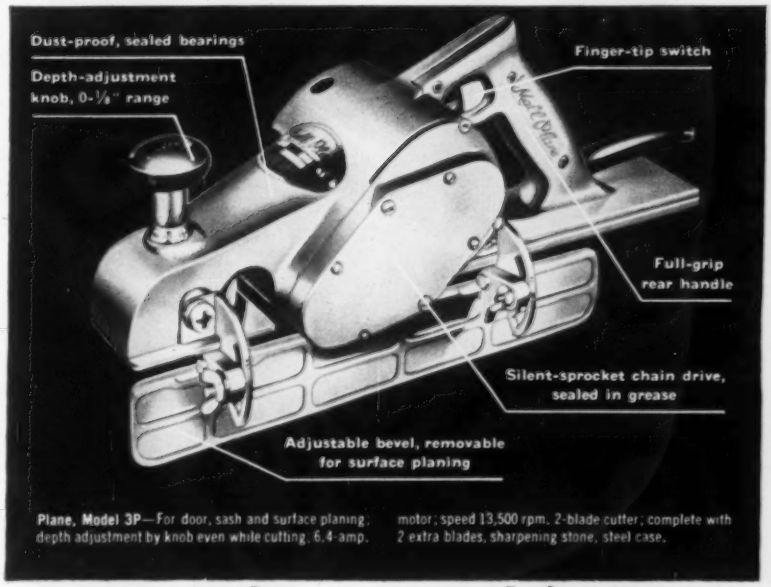
• **Power supply**—A new complete line of Silicon Rectifier Power Supplies is available. The units are specifically designed for use in AC to DC conversion programs, DC motors and controls, electromagnets, plus crane and elevator service. They are applicable to machine tools, presses, mining and transportation service. Designs are available for general industrial DC power applications replacing motor-generator sets, mechanical rectifiers or mercury-arc tubes. AMERICAN RECTIFIER CORP., 95 LAFAYETTE ST., NEW YORK 13, N. Y.

• **Casing for post-tensioning concrete**—"Econoflex" identifies a flexible steel casing reported to have high resistance to crushing. It is made up from .012 in. strip steel in a fully interlocking four wall thickness. The wide profile design of the U-100WP "Econoflex" casing allows smooth non-kinking curves. The casing is available in sizes from 1⅜ to 2½ in. Grouting connections are supplied as required. UNIVERSAL METAL HOSE CO., 2133 S. KEDZIE AVE., CHICAGO 23, ILL.

• **Bronze alloy**—A corrosion-resistant nickel-silicon bronze alloy combining both high yield and ultimate tensile strengths has been developed. The new alloy, called Silnic Bronze, is age hardenable and available in soft, cold forming and hard tempers. Age hardening is a rapid, inexpensive treatment at 900F for 90 minutes, according to the manufacturer. The alloy composed of 97.5% copper, 1.9% nickel and 0.6% silicon, is available in a variety of sections and dimensions in rod, bar and coil. CHASE BRASS AND COPPER CO., WATERBURY, CONN.

• **Tire pressure indicator**—A gage screwed to each tire valve signals when pressure has dropped more than 6 lb below correct operating level. A small red rod projects from the top of the 1 in. gage as long as tires are properly inflated, saving tedious checking of each time with a gage. No-Lo is available for trucks in 5 lb increments from 40 to 105 lb and for passenger cars in 2 lb increments from 22 to 34 lb. FREEBANK CO., 711 W. BROADWAY, GLENDALE 4, CALIF.

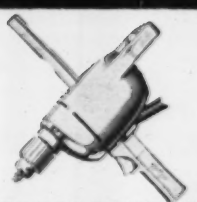
POWER to boost job efficiency with REMINGTON tools


Dust-proof, sealed bearings
Depth-adjustment knob, 0-⅛" range
Finger-tip switch
Full-grip rear handle
Silent-sprocket chain drive, sealed in grease
Adjustable bevel, removable for surface planing

Plane, Model 3P—For door, sash and surface planing; depth adjustment by knob even while cutting. 6.4-amp. motor; speed 13,500 rpm. 2-blade cutter; complete with 2 extra blades, sharpening stone, steel case.

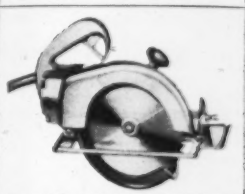
Sander, Model 57S—7" discs, quick-change spindle lock; free speed: 4,500 rpm.; heavy-duty ball bearings; 10 amps., 115 or 230 v.; wt. 14 lbs.

Polisher, Model 57P—9" bonnet; free speed 1,400 rpm; load speed 840 rpm; 7.0 amps., 115 or 230 v.; heavy-duty ball bearings; wt. 19 lbs.

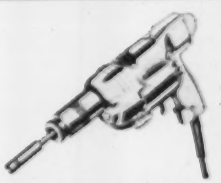


Electric Drill, Model 125—½" capacity, geared key chuck; 5-amp. motor; removable auxiliary handle; ball and needle bearings; wt. 8½ lbs.

Powerful, rugged, easy to handle—Remington Power Tools help you boost output and ease the tough jobs. They're precision-built for long service and minimum maintenance. Your Remington distributor stocks and services the industry's widest selection of power tools and parts.



Electric Saw, Model 86—8½" blade; cuts full 2⅞"; bevel cuts to 2⅝"; powerful 15 amp. motor; complete with blade, wrench and carrying case.



Screwdriver, Model 143SR—Reversible; capacity: No. 10 wood screws; adjustable clutch for pre-set tension; ball bearings; locking trigger switch.

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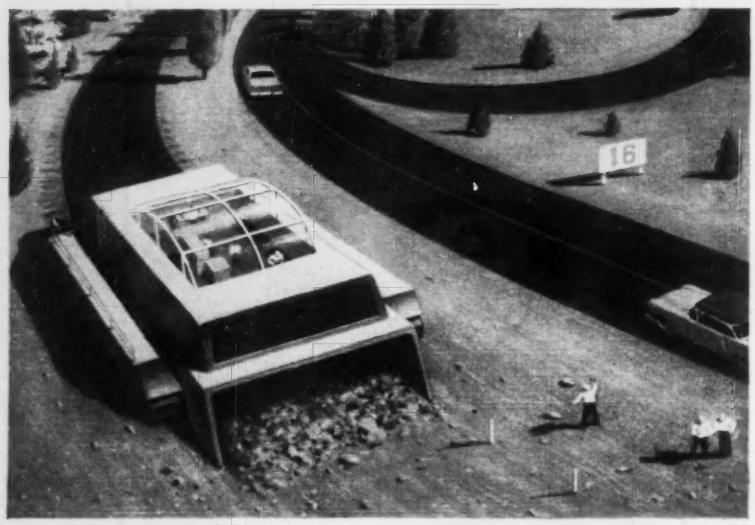
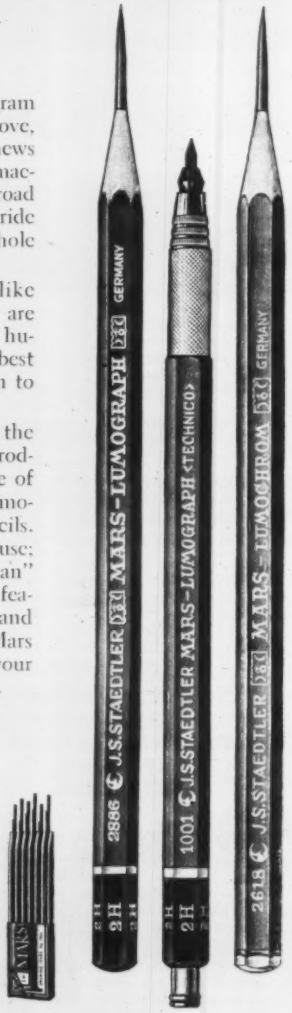


roll your own!

Speeding up our national road-building program is the goal of this design by Russ Henke of Elm Grove, Wisconsin. His behemoth of a machine literally chews up unmapped earth, compacts it with asphalt or macadam, stabilizes it, and lays a ribbon of paved road behind as it rumbles along! Crew and engineers ride in an air-conditioned cabin, and monitor the whole process by control instrumentation.

Tomorrow's *roads* may be squeezed out like toothpaste, but outstanding *ideas* for tomorrow are still produced in the old-fashioned, painstaking, human way. And only professionals know how the best in drafting tools can smooth the way from dream to practical project.

In pencils, of course, that means Mars, long the standard of professionals. Some outstanding new products have recently been added to the famous line of Mars-Technico push-button holders and leads, Lumograph pencils, and Tradition-Aquarell painting pencils. These include the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman" pencil sharpener with the adjustable point-length feature; Mars Lumochrom, the color-drafting pencils and leads that make color-coding possible; the new Mars Non-Print pencils and leads that "drop out" your notes and sketches when drawings are reproduced.



The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom color-drafting pencil, 24 colors.

J.S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY

at all good engineering and drawing material suppliers

Publications

Tapping pipe—How to tap steel-cylinder prestressed concrete pressure pipe without interrupting service is described. 12 page manual. PRICE BROTHERS CO., 1932 E. MONUMENT AVE., DAYTON 1, OHIO.

Gravel cleaning—Theory, operation and results possible by producing premium aggregate by the heavy media process. A full color movie. WESTERN MACHINERY CO., 650 FIFTH ST., SAN FRANCISCO, CALIF.

Trenching method—How to construct a trench in free running material using a special slurry slightly heavier than water. The slurry prevents water from running and walls from sloughing. 8 page booklet. CRONESE PRODUCTS, INC., 102 N. BRAND BLVD., GLENDALE 3, CALIF.

Wire rope lubrication—Describing how to lengthen wire rope life by proper lubrication techniques. A 12 page, pocket size book with illustrations. UNION WIRE ROPE CORP., 2100 MANCHESTER AVE., KANSAS CITY 26, MO.

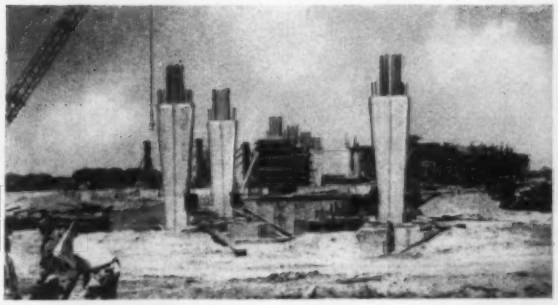
Materials handling—Description of vibratory bulk materials handling equipment and other products. A 64 page catalogue, No. 586, with illustrations and specifications. SYNTRON CO., 328 LEXINGTON AVE., HOMER CITY, PA.

Self-dumping hoppers—Illustration and description of the complete line of self-dumping hoppers, in capacities from ½ to 2 cu yd. A 4 page brochure. APEX WELDING & FABRICATING CO., 30 INTERSTATE ST., BEDFORD, OHIO.

Mobile radios—A reference primer on the entire field of 2-way radio communications. "You and Two-Way Mobile Radio." A 20 page booklet MOTOROLA COMMUNICATIONS AND ELECTRONICS INC., 4501 W. AUGUSTA BLVD., CHICAGO 51, ILL.

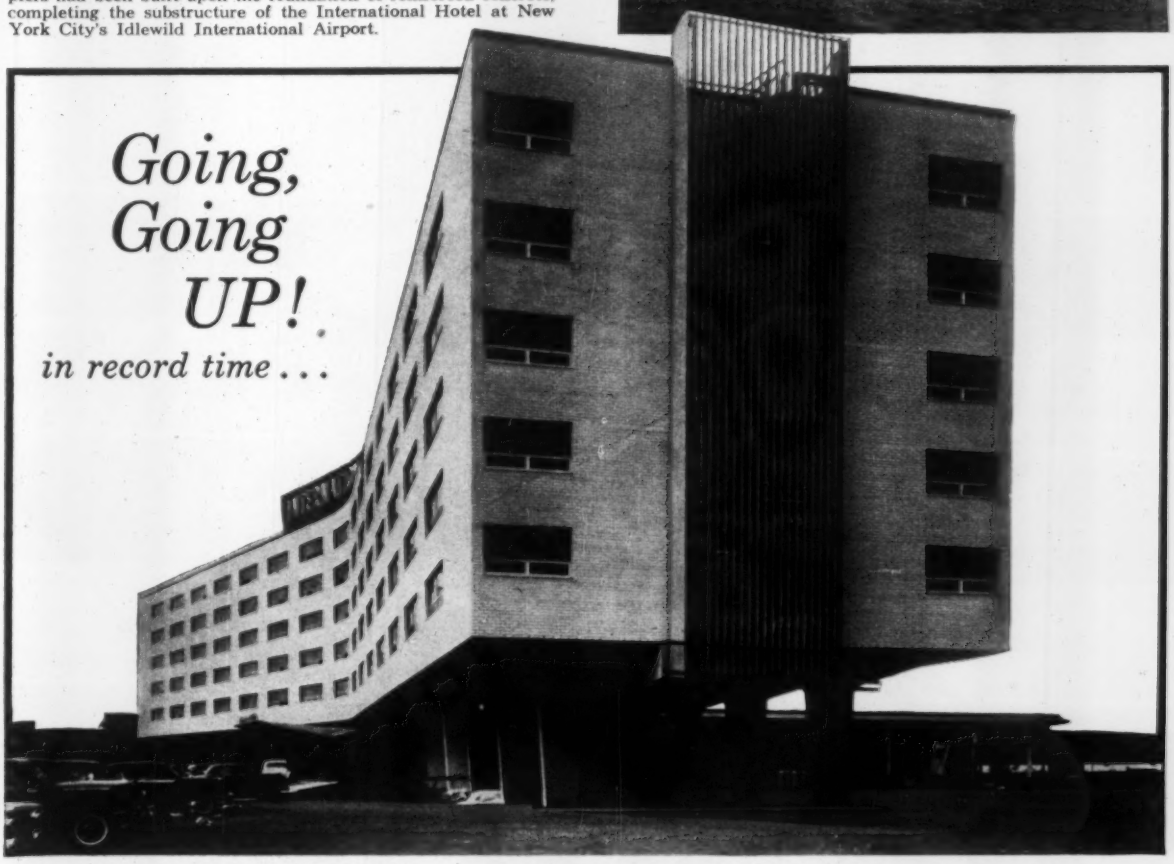
Air diffusion—Theory and application of air diffusion in sewerage and waste treatment is discussed. Bulletin details Sparjer aeration headers and gives successful application data. 8 pages. WALKER PROCESS EQUIPMENT CO., BOX 266, AURORA, ILL.

Flow meters—Photographs, line drawings, cutaway views, and technical data supplement description of 2 to 12 in. Propeloflo meters for liquids and 1 to 12 in. Shuntflo meters for steam or gases. Bulletin #100-R1. BUILDERS-PROVIDENCE, INC., 345 HARRIS AVE., PROVIDENCE 1, R. I.



By July, 1957, several hundred reinforced concrete cantilever piers had been built upon the foundation of reinforced concrete, completing the substructure of the International Hotel at New York City's Idlewild International Airport.

By September, 1957, the upper frame structure of reinforced concrete was being completed at a fast pace (note illustration below). In March, 1958, the exterior walls of glazed white brick were completed (see large illustration below).



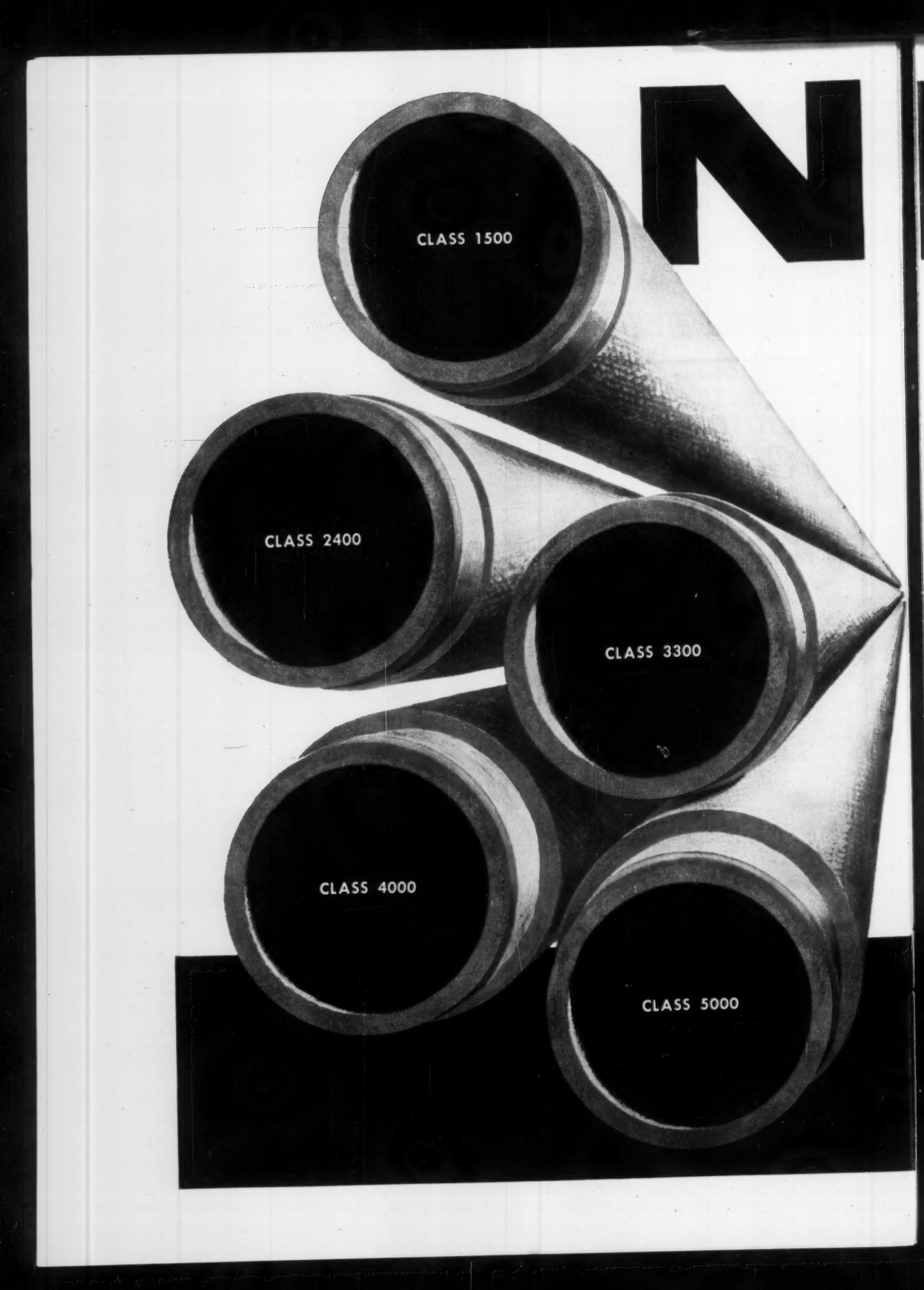
Reinforced Concrete speeds construction

Another notable example of the trend toward reinforced concrete construction is the new International Hotel at New York International Airport. The handsome 320-room hotel, located 2.5 miles from the new Arrivals Building, was built by the Port Authority of New York and designed by Architect William Tabler. The new hotel stands on reinforced concrete piers to give it an "air-borne" appearance. Important among the reasons for utilizing reinforced concrete construction for this new structure were speed of construction, ease of cantilevering, and the inherent fireproof qualities of reinforced concrete making possible lower insurance rates. The ready availability of reinforcing steel permitted the job to get under way at the earliest possible date. Before you build, investigate this economical, flexible, and timesaving medium of construction. Compare—and you will design for Reinforced Concrete.

Concrete Reinforcing Steel Institute
38 South Dearborn, Chicago 3, Illinois

CONCRETE REINFORCING STEEL INSTITUTE
C.R.S.I.
FOUNDED 1924

INTERNATIONAL HOTEL, New York City
Builder: Port of New York Authority
Management: Knott Hotels Corporation
Architect: William Tabler
Contractors: George F. Driscoll Company; Moccia Construction Corporation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Now select "K&M" Sewer Pipe that exactly meets the requirements of soil conditions.

These five new crushing strengths in a variety of sizes by "K&M" bring sewer pipe specifications closer than ever to pinpoint accuracy.

Because never before have you been able to so exactly match the requirements of different laying conditions. Now you can minimize over-buying and costly concrete encasement. Now you can plan pipe layouts the way you've always wanted!

You can select "K&M" Asbestos-Cement Sewer Pipe to suit the depth of cut, the width of trench, the weight of the soil, and the manner of bedding. You can use more realistic safety factors . . . attain greater overall economy. In short, you can select "K&M" Asbestos-Cement Sewer Pipe specifically designed to fit your job.

Write today for more information on this remarkable new development in sewer pipe. You'll eliminate planning headaches . . . and save money for your community.

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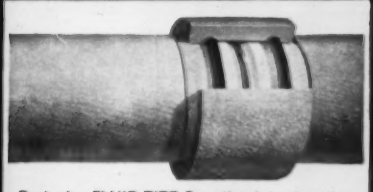
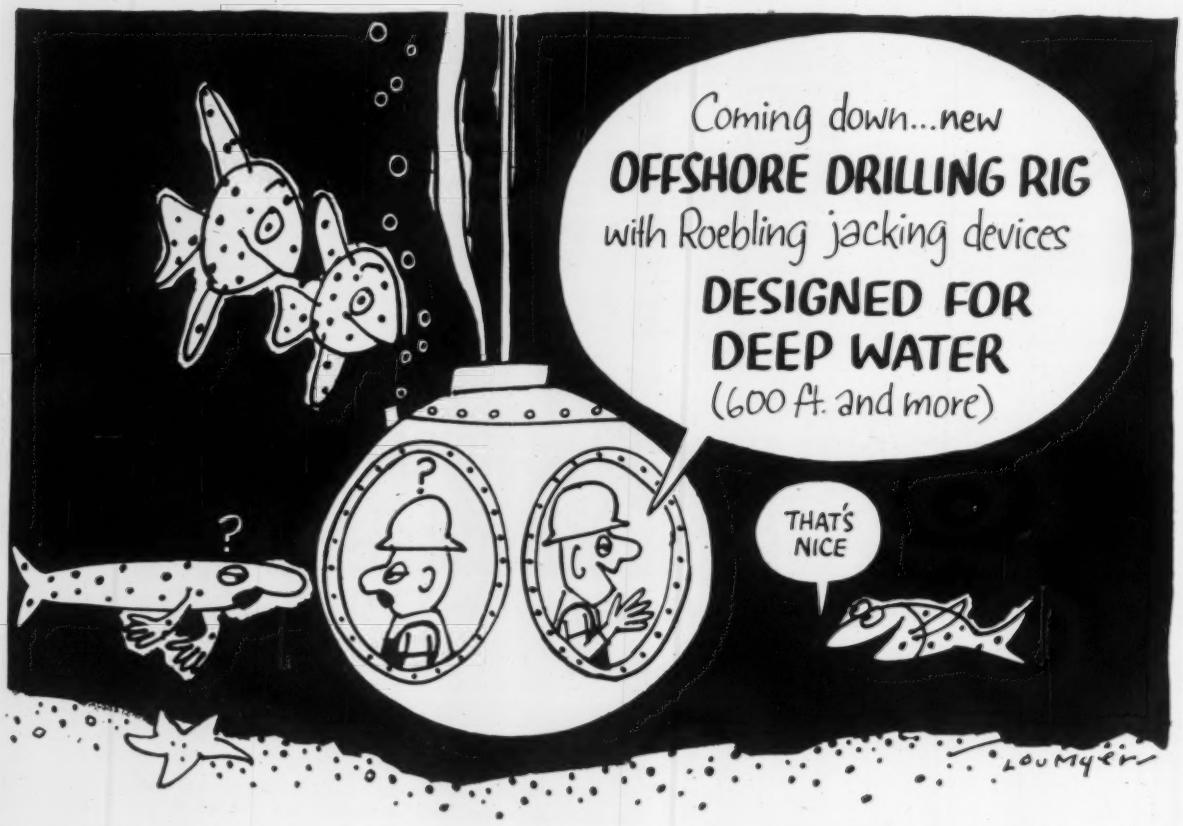
"K&M" ASBESTOS-CEMENT SEWER PIPE now classed by Standardized Crushing Strengths
(Minimum strength in lbs. per lineal foot —ASTM 3 Edge Bearing Method)

Size Inches	Class 1500	Class 2400	Class 3300	Class 4000	Class 5000
6	1500	2400	3300		
8	1500	2400	3300		
10	1500	2400	3300	4000	5000
12	1500	2400	3300	4000	5000



Exclusive FLUID-TITE Coupling joins lengths of various crushing strengths and sizes. Assemble it in any weather—without the aid of heavy machinery. It's water-tight and root-tight.



Expressly designed for deepwater locations, this equipment enables drilling where present types cannot operate.

The rig (Figure A) is towed to the drilling site in a buoyant condition, with both the anchor and deck float dewatered. At the drilling site, the anchor is gradually filled with water and lowered to the bottom by the jacking equipment. Once at the ocean floor, the anchor is completely filled with water, firmly seating it on the bottom.

While this operation is in progress, the buoyant float (Figure A) remains on the surface. Once the anchor is seated on the bottom, the Roebling jacking equipment goes into operation to bring the deck float down to operating position, which is at a predetermined level below the area wave action (Figure B).

When the drilling rig is to be moved to another area, the jack action is reversed. Strand is released to raise the deck float to the surface. The anchor float is pumped out sufficiently to permit the jacks to raise it to traveling position, under the deck float. During all of these raising and lowering operations, the strand is spooled up and payed off by means of power operated storage reels.

This is another example of how Roebling suspension systems and their principles can be—and are constantly—applied in the unlikeliest of places. Roebling's design, construction and service abilities range far and wide, embracing pipe line bridges, material and personnel tramways, ski lifts, guyed towers, suspended roofs and *suspension systems of all kinds*. The experience and knowledge gained from these activities prompts us to invite inquiries on any suspension project. Bridge Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation

FIG. A

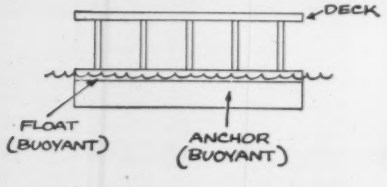
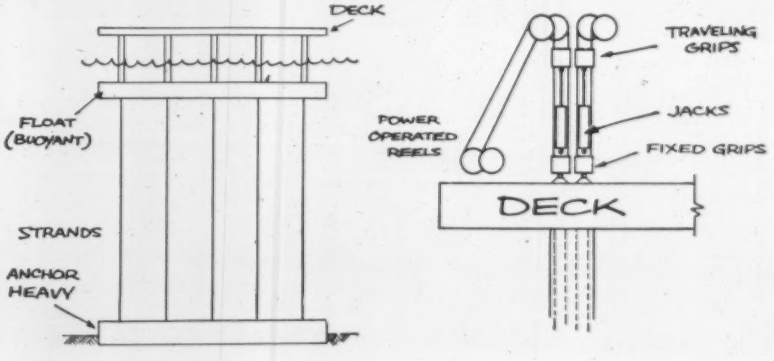


FIG. B



COL. A. E. STOLTZ (right) receives key to the Air Force Academy at Colorado Springs for presentation to Maj. Gen. J. E. Briggs (left) academy superintendent.

Presentation Marks Academy Opening

With cadets scheduled to move into the U.S. Air Force Academy at Colorado Springs, Colo., at the end of this month, a symbolic, gold master key was presented Aug. 1 to Col. Albert E. Stoltz, director, Air Force Academy Construction Agency, to mark the occasion. He, in turn, gave it to Maj. Gen. James E. Briggs, superintendent of the academy, for permanent display in the academy museum.

The key was presented by James D. Young, Yale & Towne executive. It is a great, grand master key, which will operate all the locks at the Colorado Springs academy.

Colonel Stoltz pointed out that the academy, started only four years ago, is being built from scratch on a 17,800 acre, hilly site. To date, 53 major building contracts have been completed, and 14 more are expected to be finished by the end of this month. The academy will not be entirely finished on opening day, but there will be enough facilities ready for the first contingent of 1,160 cadets who will move in for the fall term. Construction is being done within a $114 million authorization from Congress, he said.

Ward J. Oates Is Made Kentucky Highway Head

The new Kentucky State Highway Commissioner is Ward J. Oates, state finance commissioner since last fall. He succeeds James W. Martin, who resigned to resume his post as head of the Bureau of Business Research at the University of Kentucky. Commissioner Oates was appointed to his new job by Gov. A. B. Chandler.

Mr. Oates, who is 52, joined the state revenue department in 1938. He was commissioner of revenue when he left to accept an Army commission in 1943. After the war he went into private business until he joined the finance department two years ago.

Charles A. Byrley, deputy finance commissioner, has been made deputy highway commissioner, succeeding Phil. M. Miles.

Dallas Consulting Firm Reorganizes and Expands

Koch & Fowler, Dallas consulting engineering firm, has reorganized as Koch & Fowler and Grafe, Inc. Adam K. Grafe is the new president. Named as vice presidents were James D. Fowler and Earl W. Sudderth. The reorganized and expanded company will concentrate in the municipal services field.

Before entering the engineering field in 1955, Mr. Grafe was in the oil business and had strip mining interests in Oklahoma. Mr. Fowler was a cofounder of the original partnership in 1914.

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makes tough jobs look easy!
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MARINE TRUST BLDG., Buffalo
Braced and underpinned 7 story printing bldg. by jacking 86 hercules pipe piles, prior to installation of Marine Trust Bldg. deep pile foundations. John W. Cowper Co., Inc., General Contractors.
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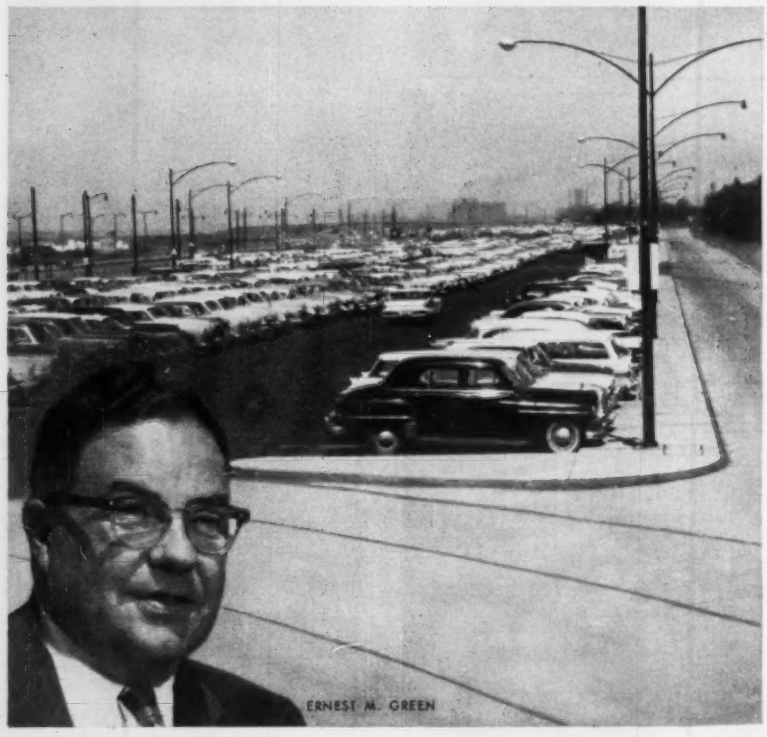
Milwaukee—Twin Cities—Denver—New Orleans

Wherever Concrete Meets Concrete



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Does the job best!

Part of Cleveland's "New Look," the new Municipal Parking Lot, built by American Construction Company, has 2100 car capacity.

"This job is built to take continuous traffic, plus Cleveland's extremes of hot and cold lakefront weather," says American's Ernest M. Green.

"We used Flexcell exclusively in the concrete work. We like the way it stands up under tough everyday punishment, the way it handles and installs. One of the finest products on the market!"

Flexcell fiber board bonds firmly to concrete, compresses without extruding, re-expands to keep joints filled. Uniform asphalt impregnation. Tough, rigid, light in weight. Easy to cut and install. Fabricated to your specifications. Call your Celotex distributor now.

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Obituaries

Canadian Bridge Designer Philip Louis Pratley Dies

Philip Louis Pratley, 73, a noted Canadian consulting engineer, who recently was called to investigate the collapse of the second Narrows Bridge in Vancouver. At the time of his death, Mr. Pratley was working on the projected Champlain Bridge from Montreal to Nun's Island.

Since opening private practice in 1921, he also has been a consulting engineer for the Detroit International Bridge and Burlington Skyway; the Angus MacDonald Bridge, which links Halifax and Dartmouth, N. S., and the Canso Span project linking Cape Breton Island and the Nova Scotia mainland. Last fall, he was employed to investigate the Alaska Highway bridge collapse.

Mr. Pratley was born in Liverpool, England, and educated at the Liverpool Institute, the University of Victoria and Liverpool University, where he received his B.S. and B.E. He came to Canada in 1906 and worked as a draftsman for Dominion Engineering, Montreal, for several years and as a designer for the Quebec Bridge Board.

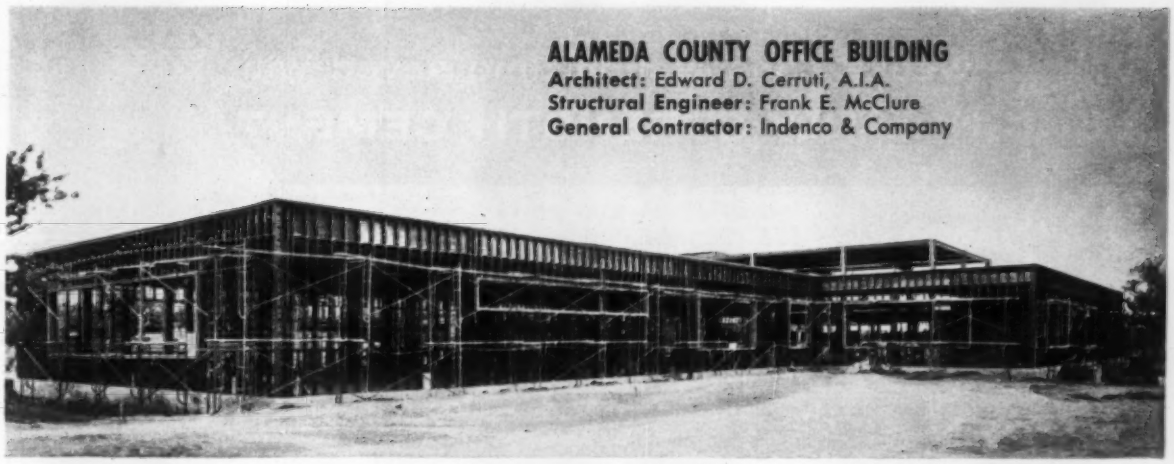
In 1921, he entered into a partnership as a consulting engineer with the late C. N. Monserrat, which lasted until 1940. During that time, Mr. Pratley worked on the design of the Jacques Cartier Bridge, the Lion's Gate Bridge, Vancouver, the Niagara Arch and the Canadian portion of the Thousand Islands Bridge.

Arthur L. LaRoche, 71, former Binghamton, N. Y., public works commissioner. He began his career with the city as a civil engineer in 1910.

Wilbur F. Groscurth, 52, president and general manager of the Owensboro Sewer Pipe Co., Ky., manufacturer of vitrified clay pipe.

Robert F. Blanks, 57, vice president and general manager of Great Western Aggregates, a subsidiary of Ideal Cement Co., in Denver. He was recognized as one of the country's leading engineers. Mr. Blanks received a civil engineering degree in 1924 and a degree in chemical engineering in 1936. He co-authored the book, "Technology of Cement and Concrete", published in 1955.

John T. Mangum, 57, superintendent of the Durham, N. C. office of the George W. Kane Construction Co. He had been associated with the company for 38 years.



ALAMEDA COUNTY OFFICE BUILDING
Architect: Edward D. Cerruti, A.I.A.
Structural Engineer: Frank E. McClure
General Contractor: Indenco & Company

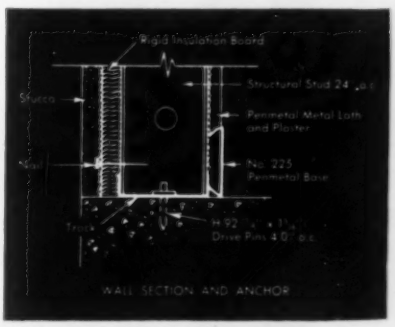
They designed for fire-safety at low cost using Penmetal nailable studs and metal lath

In designing the new office building for Alameda County, California, the architect took full advantage of economies inherent in Penmetal LIGHTSTEEL framing. These included faster erection and easier attachment of collateral materials.

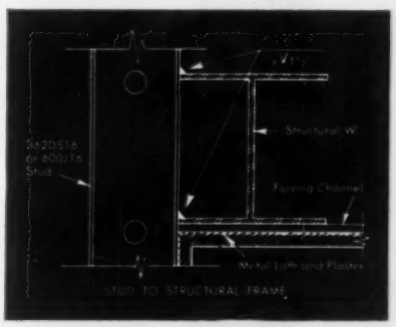
Furthermore, LIGHTSTEEL framing made fire-safe construction possible at low cost. Structural engineer, Frank E. McClure, says, "This was one of the main points in selecting this type of construction due to the large number of county records and documents to be filed in the building...We wanted to have the fire-integrity of incombustible construction at the low price of LIGHTSTEEL."

The structure has a conventional moment resistant steel frame with LIGHTSTEEL studs used for the exterior walls. The inside of these walls is Penmetal lath, plaster and flush-steel base, as shown in the accompanying detail. Permanent partitions and ceilings are also metal lath and plaster. The nailing feature of Penmetal LIGHTSTEEL studs was used for attachment of a variety of collateral materials. This resulted in important savings in time and cost.

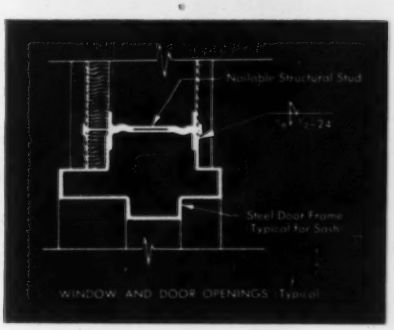
Write for further information on versatile LIGHTSTEEL. Ask for catalog SS-22.



WALL SECTION AND ANCHOR



STUD TO STRUCTURAL FRAME



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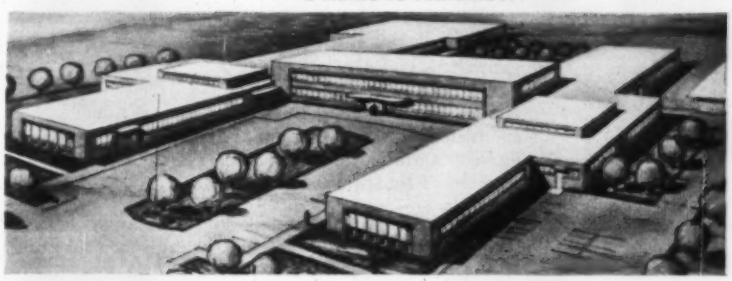

6 weeks construction time saved with LEHIGH EARLY STRENGTH CEMENT

• The City of Rochester, N. Y. is known as a pioneer in providing multi-story "self-service" parking facilities. The one shown here is the Mortimer Street Parking Ramp, recently opened in the heart of the downtown business district.

Concrete made with Lehigh Early Strength Cement was chosen for this ramp for two reasons. First, because a fast schedule had been set up to place concrete before the coldest months. Second, the city wanted the ramp to begin producing income as soon as possible. The results speak for themselves. Concrete pours were completed by early December, cutting construction time by 6 weeks. The ramp was opened in March, in time for Easter shoppers.

This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction.

CONTRACTOR:
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ARCHITECT:
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READY MIX CONCRETE:
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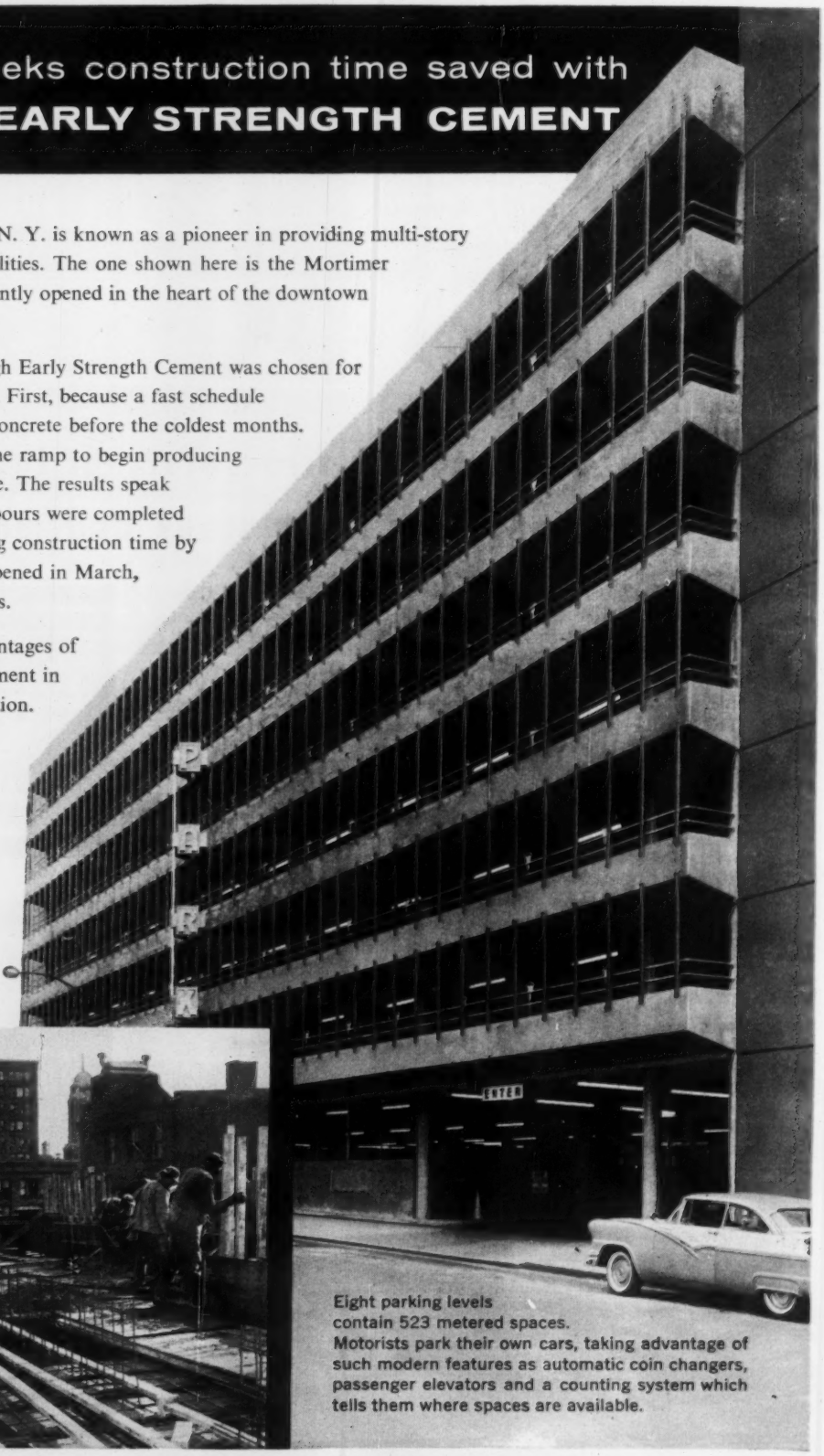

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Intent Important Factor In Construing Contracts

How should ambiguous portions of a written contract be construed? Generally, a court will read the contract as a whole and try to determine the intent of the parties to the contract.

Some of the general rules are these:

"'The practical interpretation given to the terms of the contract by the parties should always be given weight, depending somewhat upon the extent to which they have applied that interpretation and somewhat upon the definiteness with which they applied their minds to the problem.' 3 Corbin on Contracts, Section 558. See also U. & R. Lamb v. Norcross Brothers Co., 208 N. Y. 427, 431, 102 N.E. 564, 565.'"[1]

A contract must be taken as a whole and all its relevant provisions considered in connection with each other to determine its meaning. In determining the effect of a written contract, inquiry must be not what the parties intended, but what is the intent expressed in the written contract.[2]

Mere intention of one of the parties as to what the contract was to mean or signify, will not override or add to clear unambiguous words used in the instrument. A court will not under the guise of construing a contract add language to the instrument which the parties could have inserted into the same had they so desired. Words used in a business contract are to be construed and interpreted in the light of understanding of a reasonable business man. The language of a contract is to be construed more strictly against the party who drafted it.[3]

(1) Pease & Elliman, Inc. v. Weissman, 167 N.Y.S. 2d 601.
(2) Gilden v. Singer Mfg. Co., 139 A. 2d 611.
(3) Oswegatchie Light & Power Co. v. Niagara Mohawk Power Corp., 167 N.Y.S. 2d 587.

Various Remedies Apply In Cases of Deception

A contractor injured by fraud or misrepresentation can resort to one of several remedies. Generally, he may refuse to perform the contract or complete the contract and sue for damages.

A general discussion of the law follows.

"The law is clear that a person who has been induced through fraud to enter into a contract has the option either to disaffirm the contract and return or tender back the consideration he has received, or to affirm the contract, and sue or counterclaim for the damages he has sustained. Heckscher v. Edenborn, 203 N. Y. 210, 96 N. E. 441; Sager v. Friedman, 270 N. Y. 472, 1 N. E. 2d 971. He cannot retain the consideration he has received and refuse to perform the obligations imposed upon him by the contract. Merry Realty Co. v. Shamokin & Hollis Real Estate Co., 230 N. Y. 316, 130 N. E. 306. He may rescind his purchase and sue to get his money back, or he may keep his purchase and sue to recover damages for fraud. He cannot do both. Brennan v. National Equitable Investment Co., 247 N. Y. 486, 160 N. E. 924."[1]

There are numerous cases where contractors have recovered the increased cost of the work resulting from misrepresentations in the plans and specifications.[2] A very interesting and unusual case[3] was one where the contractor discovered the misrepresentations after the job was completed and had received payment in full for the contract price. Despite the fact that the contract contained a provision to the effect that the acceptance of the last payment would constitute a release of all claims, the contractor, having lost money on the job, elected to rescind the contract and recovered the difference between the contract price and the fair and reasonable value of the work performed.

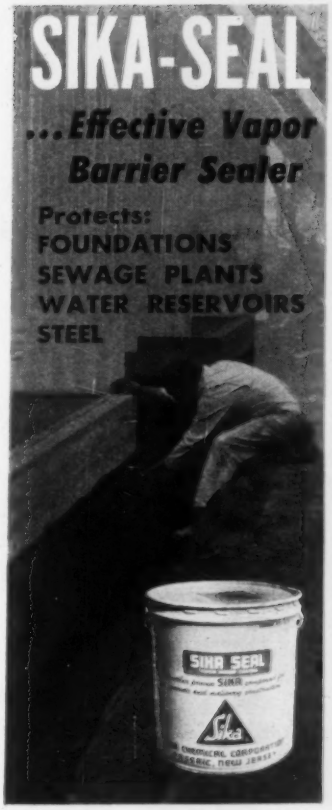
(1) Clearview Associates Inc. v. Clearview Gardens First Corp., 168 N. Y. S. 2d 432, N. Y. Supreme Court, Special Term, Queens County, Aug. 14, 1947.
(2) Chapter 6, of Author's Book, "Legal Phases of Construction Contracts."
(3) Nordone Contracting Co. v. City of New York, 269 App. Div. 1035.

Court Refuses to Prevent Peaceful Union Picketing

Unions generally are permitted to engage in peaceful picketing for a lawful purpose.

In a Pennsylvania case that arose under the state's Labor Anti-Injunction Act, the court denied a contractor's request that picketing of a construction job by a group of unions be halted. The denial was affirmed on appeal.[1]

The court held that the fact that many of the suppliers of materials needed for the performance of the work employed union drivers who refused to pass the picket line was not a ground for the granting of an injunction restraining the picketing, where as in the instant case, the picketing was peaceful



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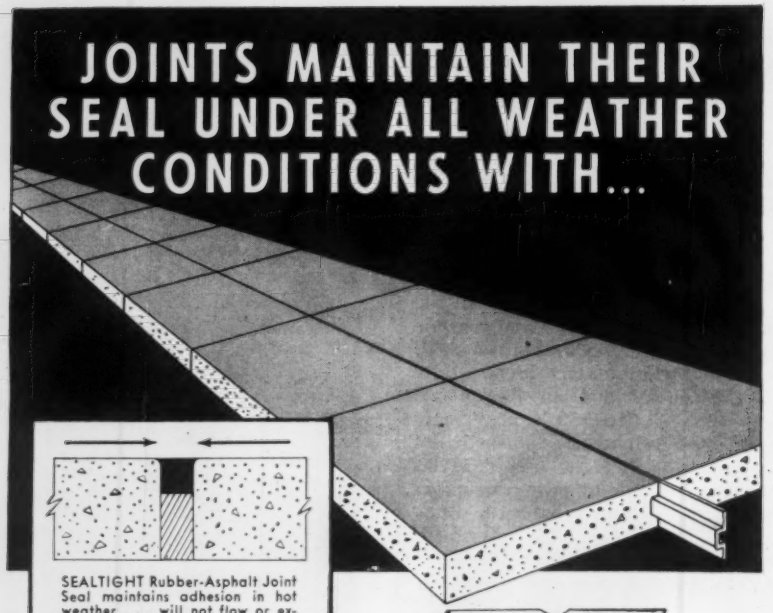

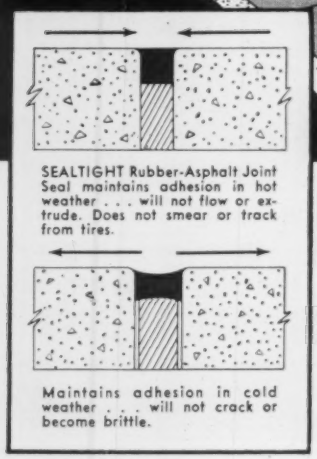

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and for the sole purpose of persuading non-union employees to join the union; however, if the picketing is for the purpose of coercing the employer to compel his employees to join the union, such picketing would be unlawful and therefore enjoinable.

The appellate court stated: "There is no evidence of the existence of the latter purpose in this case, unless it can be said that the refusal of teamsters, who drive the trucks carrying the building materials and supplies, to cross the picket line, as a matter of their own choice and their desire to follow the practices of their own union, must, in all cases, be construed as coercion to compel the employer to force his employees to join a union." The court held that the facts did not justify the reaching of any such conclusion.

(1) Amore v. Beaver County Bldg. & Const. Trade Council, 126 A. 2d 725

Indemnity Clause Applied To an After-Work Injury

A contract clause under which a subcontractor indemnifies a general contractor against liability for personal injuries occurring on the job may not be narrowly construed.

In a recent federal case[1], the crucial question was whether an accident occurred in the course of the sub's work. The facts were these:

A subcontract for erection of structural steel provided that the subcontractor would indemnify the general contractor against liability for personal injuries "growing out of or resulting from the execution of the work provided in this contract or occurring in connection therewith."

While the work was in progress, an employee of the subcontractor's sub fell through the roof, was injured and died. At the time of the fall, the employee had finished his work and was leaving.

The court held that the injury did occur in connection with the contract. The subcontractor, it said, could not avoid liability on the ground that the language of the indemnity clause was limited to cases where there was a casual connection between the doing of the work described in the contract and the injury.

These summaries of court decisions are prepared by I. Vernon Werbin, Esq., New York attorney and licensed professional engineer, who is author of the following books published by McGraw-Hill Book Company, Inc.: *Legal Phases of Construction Contracts; Legal Guide for Contractors, Architects and Engineers;* and *Legal Cases for Contractors, Architects and Engineers.*

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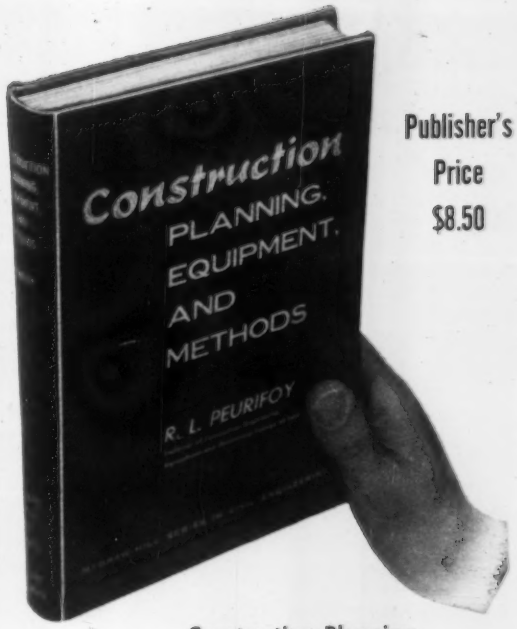

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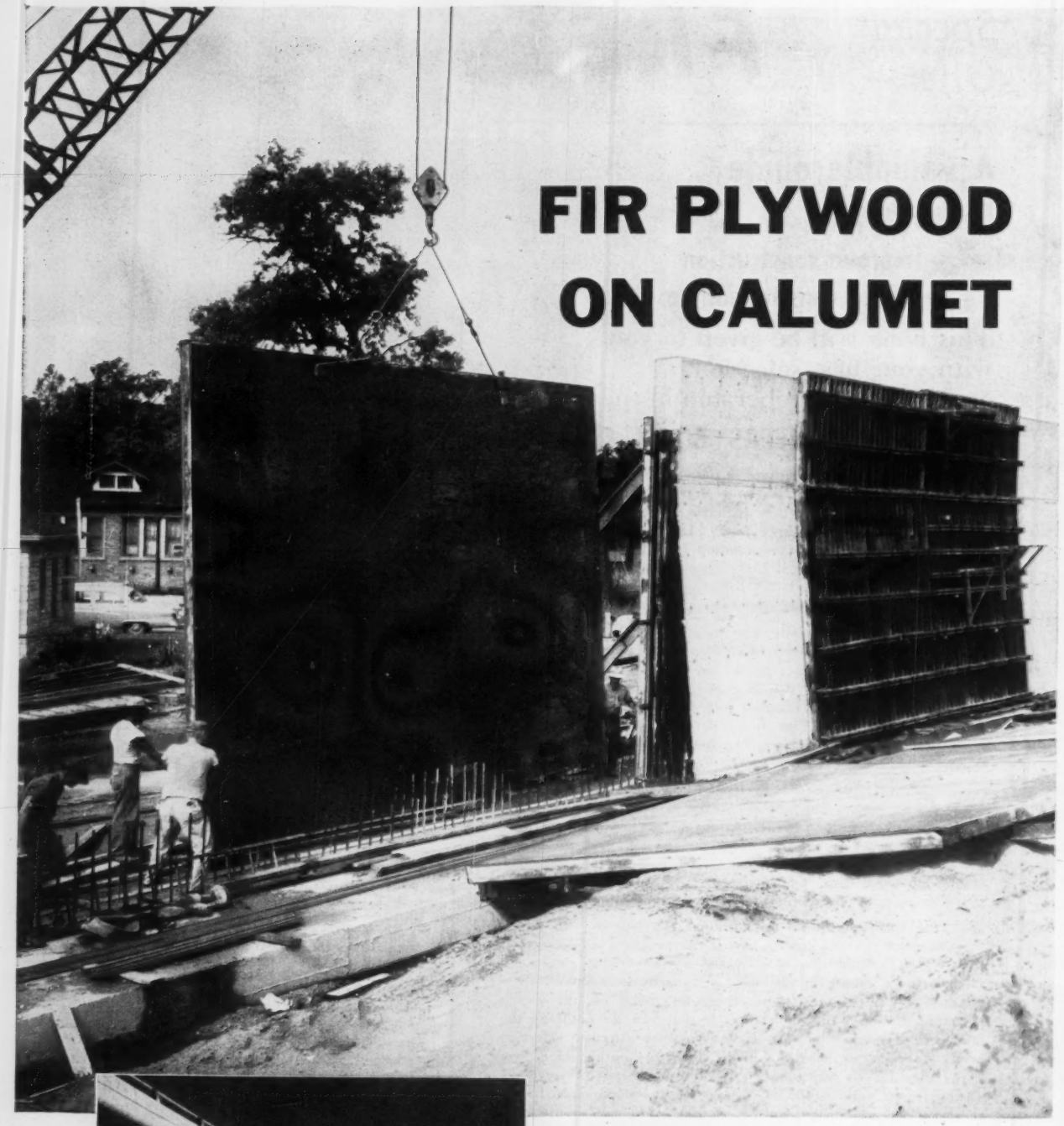

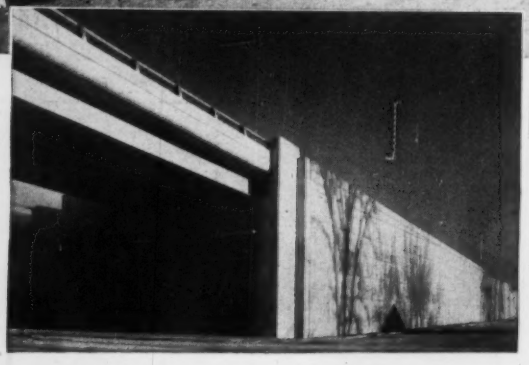

Big prefabricated fir plywood form sections helped cut costs, speed work on 8-mile long Calumet Skyway.

CALUMET SKYWAY TOLL BRIDGE LOCATION:
West end of Indiana Toll Road to downtown Chicago

COORDINATING ENGINEERS:
De Leuw Cather & Company

CONTRACTORS FOR FORMWORK:
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Arcole Midwest Corp., Skokie, Ill.
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Kenny Construction Co., Skokie, Ill.

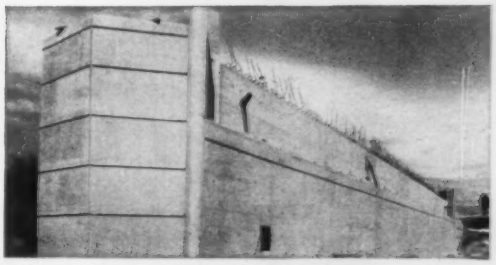
FORMS SPEED CONCRETING SKYWAY TOLL BRIDGE

GIANT FIR PLYWOOD FORM SECTIONS, as large as 28' x 31', played an important role in keeping work moving at a near record clip on the new eight-mile long Calumet Skyway which links the Chicago business district with the Indiana toll road.

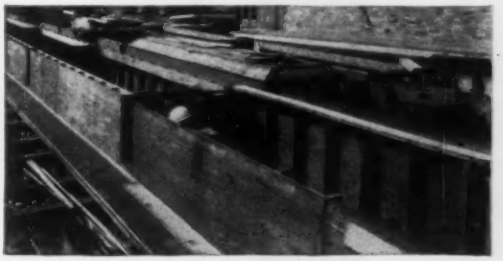
The job features one of the world's longest retaining walls along three of the eight miles. Over 30 feet tall in places, the wall was formed by leap-frogging the big prefabricated plywood form sections. In most instances, forms were built to maximum wall height and simply cut down for shorter walls. Plywood forms were also used for abutments at street crossings and for beams and bridge decks on overpasses.

Plywood was called for in the job specifications for uniformly smooth concrete, but contractors on the job credit plywood's ease of fabrication and handling—coupled with a high number of re-uses (up to 15 or 20 pours)—with holding down costs as well.

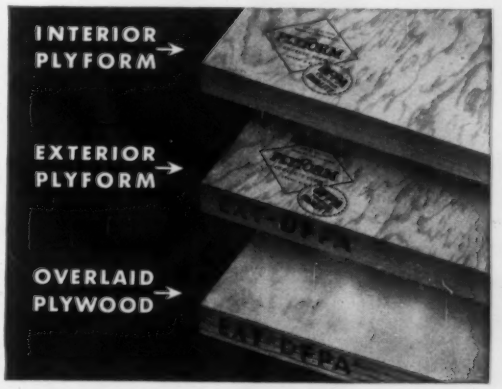
All told, over 300,000 square feet of plywood forms were used by the five contractors concerned with pouring walls, abutments and decks.



Rustication lines on walls and abutments were achieved by nailing strips to face of plywood forms.



Fir plywood was also used for forming reinforced concrete beams and deck slabs on entrance ramps.



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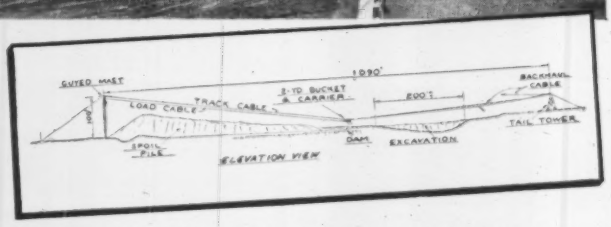

Slackline Cableway—A 2-yd. bucket is used to maintain a clear channel to an irrigation project. The cableway digs the hard packed silt and conveys it to a spoil pile on the downstream side of the dam. Method permits removal of silt without wasting water.—*Sauerman News No. 146.*

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DragScraper—Coal storage at this large eastern plant is provided by two 7-cu. yd. DragScrapers. New machine (left) parallels one in service for over 25 years. Buckets are shifted by remote control from stations above head-end monorail. Traveling tail towers provide lateral movement of buckets on coal pile.
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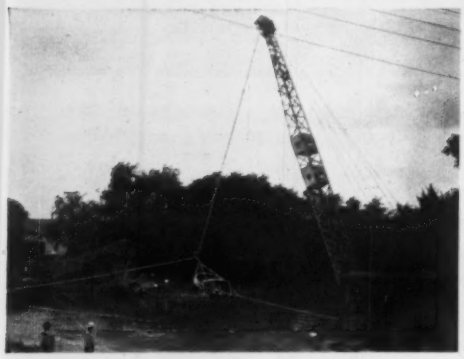

UNDERWATER TRENCHING

DragScraper and Crane—Here's how a DragScraper used with a carrier and track cable can extend the reach of any crane. This arrangement was highly successful in digging a trench for underwater pipe and backfilling after pipe was laid. —*Crane-DragScraper information is available in Field Report No. 228.*

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Flow Meters

Principles and Practice of Flow Meter Engineering—by L. K. Spink. 549 pp. The Foxboro Co., Foxboro, Mass. $15.

This is the eighth edition of a standard text and handbook for use in fluid flow measurement. It covers the entire field of flow measurement, with chapters on the history of developments in flowmetering, theory of flow meters, the use and installation of primary devices, meter mechanisms, and liquid, steam and gas flow measuring practices. Tables and curves have been revised where necessary to cover new data or provide greater convenience.

Reports and Pamphlets

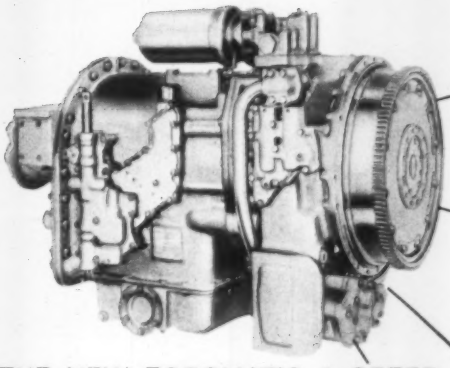
Bibliography on Tidal Hydraulics, Report No. 2, Supplement No. 2—Recorder, Committee on Tidal Hydraulics, c/o U.S. Army Engineer Waterways Experiment Station, P.O. Box 631, Vicksburg, Miss. 50¢.

1957 Edition of Folio of Flood Control and Navigation Maps of the Mississippi River—Mississippi River Commission, Corps of Engineers, U.S. Army, P.O. Box 80, Vicksburg, Miss. $2.00.

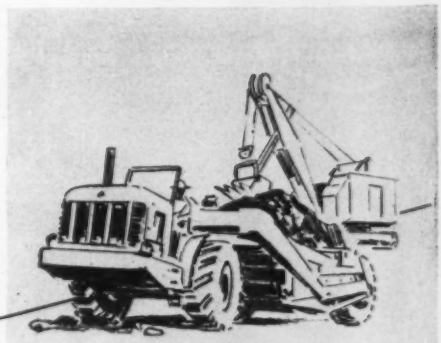
Heating, Ventilating, Air Conditioning Guide 1958—Vol. 36. American Society of Heating and Air-Conditioning Engineers, Inc., 62 Worth St., New York 13, N. Y. $12.00.

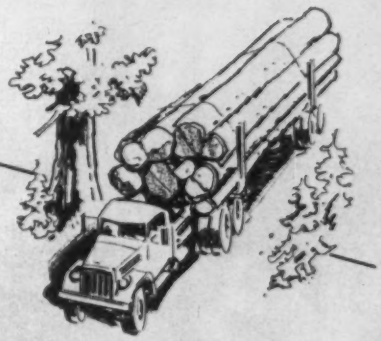
Inelastic Behavior of Aluminum Alloy I-Beams With Web Cutout:—by Will J. Worley. Bulletin No. 448. University

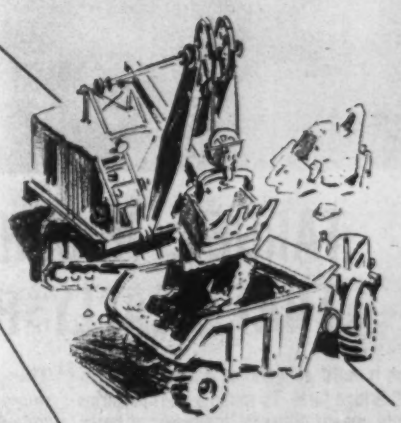
On a tough haul – it beats them all



THE NEW TORQMATIC 4-SPEED TRANSMISSION BY ALLISON







WHEREVER there's a tough job to be done—in logging, mining, highway building or dam construction—you can depend on TORQMATIC to do it better—in *less time*.

Take the TORQMATIC CBT-5640, for instance. Its converter automatically adjusts the speed and torque in any gear range—its 4 speeds forward and 2 reverse in the transmission give you an even wider range of speed and torque.

In the rough and rugged routine of mine operations—you get full-power shifts with a finger flick. The flow of power to the driving wheels is never interrupted for gearshifts.

In the deep woods, logs load out faster and safer – thanks to the TORQMATIC brake. The same oil that drives the wheels keeps them under a safe checkrein, too.

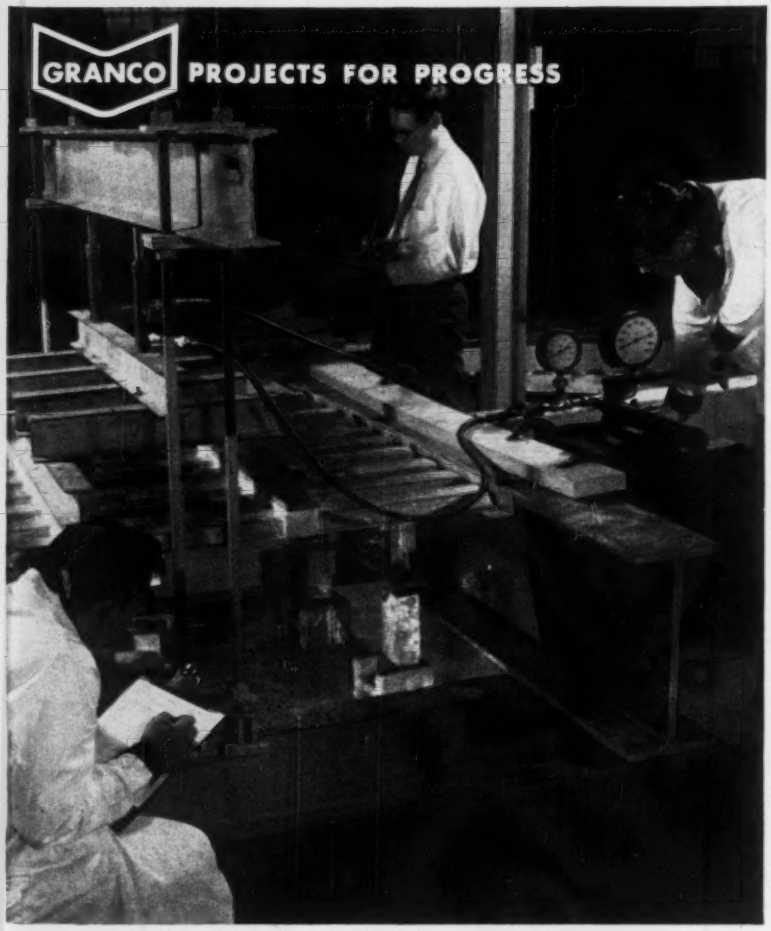
But it's in the brutal, bear-down, day-after-day grind of big construction jobs that TORQMATIC really struts its stuff. Round trips are faster because there's never an interruption of power flow while gears are shifted. And vehicles are working longer without stops in the shop, because TORQMATIC eliminates engine lugging and clutch overhauls – and the TORQMATIC brake more than doubles the life of service brakes.

Result: longer life for engine and drive-line components with less maintenance for both.

For detailed specifications on the Allison TORQMATIC CBT-5640 or other models, see your equipment dealer or write:

ALLISON DIVISION OF GENERAL MOTORS, Indianapolis 6, Indiana

Allison TORQMATIC® DRIVES



TARGET: A BRIDGE FORM THAT REALLY PERFORMS

Granco is hard at work on a new "Stay-In-Place" bridge form. To make sure it performs perfectly means literally *hundreds* of tests. Here is the story of one of them... a specific example of the patient, painstaking research behind *every* Granco product:

Above, Granco engineers test the strength of both a new permanent steel form for concrete bridge slabs and the support assembly that secures these forms to bridge framing.

To do the job accurately required the construction of a complete bridge section! With a heavy-gage, "stay-in-place" form fitted between bridge stringers (and resting on the support assembly), a hydraulic jack applies increasing loads to the top of the form. Sensitive gauges measure deflections of the form and the support assemblies.

Which type of support assembly works best? Can these forms be easily placed in position to maintain bridge deck elevations? Will the completed assembly prevent concrete leakage?

The positive answers to these and other important questions are now being determined. In developing *any* new product, Granco tests not only its own materials but the *entire* assembly in which they're used. The result: Complete assurance that every Granco product you specify is designed to meet a need... fabricated to do the job... back-stopped by Granco's dependable reputation for performance, economy and safety.

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of Illinois Engineering Experiment Station, Urbana, Ill. $1.00.

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Owner: Inland Steel Company, Indiana Harbor Works, East Chicago, Indiana
Pumping Contractor: American Dewatering Corporation, Chicago, Ill.

Predrainage by Moretrench Wellpoints permitted an open cut excavation to be made to grade 48′ below lake level, eliminating the necessity for a steel cofferdam, speeding up construction of a deep looping pit for Inland Steel Company's new mill in Indiana Harbor, Ind.

Soil conditions were unusual: Stratified sand on top of original lake bottom with clay at and above subgrade — the entire area surrounded by very pervious slag fill.

Entire job was completed — IN THE DRY — in three month's time at a considerable saving of time and money.

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Tie-in Bids on Minnesota Spans

Awards on three concrete girder span bridges hinged on low bid combination with separate grading bids

Contractors competing for these three state highway bridges over the Money Creek in Houston County, Minn., had to tie in their bids with grading bids submitted by other contractors. The three awards, for a total of $290,031, went to W. Hodgman & Sons, Fairmont, Minn., whose bids were the lowest acceptable when combined with the grading bids submitted by Morse Bros. & Associates, Inc., Rochester, Minn. A. E. LaBonte is bridge engineer of the Minnesota State Highway Dept. at St. Paul.

One of these bridges will have three 53x30' skewed, prestressed concrete girder spans. Each of the other two will have three 68x30 ft prestressed concrete girder spans.

The girders may be either pretensioned or post tensioned, at the option of the contractor, except that for pretensioned girders, the prestress transfer must not be made until the test cylinders have attained a compressive strength of 4,000 psi. For post tensioned girders, this compressive strength must be at least 4,500 psi. Control test cylinders to determine compressive strength at any time before 28 days, must measure 6 in. in dia and 12 in. in height, and must be made under identical conditions with the casting of the concrete girder, and be cured with the girder.

Specifications for Class A concrete require 6½ sacks of cement per cu yd.

Minimum rentals for compensation to be paid by the contractor for trucks hired or rented for hauling materials on a cu yd mile basis, exclusive of drivers' wages and benefits, are illustrated in this table:

Mile haul to center of zone	Rates in cents per cu yd							
	0.0 mi		0.1 mi		0.5 mi		0.9 mi	
	cy mi	Zone	cy mi	Zone	cy mi	Zone	cy mi	Zone
0			27.2	$2.73	17.2	$8.60	13.4	$12.06
1	12.8	$12.80	12.3	13.53	10.8	16.20	9.8	18.62
5	7.0	35.00	7.0	35.52	6.8	37.59	6.7	39.53
10	6.7	67.00	6.7	67.67	6.7	70.35	6.7	73.03
20	6.7	134.00	6.7	134.67	6.7	137.35	6.7	140.03

In computing the period for liquidated damages, no time during the winter months, December 1, 1958 to April 1, 1959, is counted.

Minimum wages on the job include: power shovel operators, $3.20-$3.45; carpenters, $2.75; pile drivers, $2.75; mechanic or welder, $2.98; laborers, $2.05.

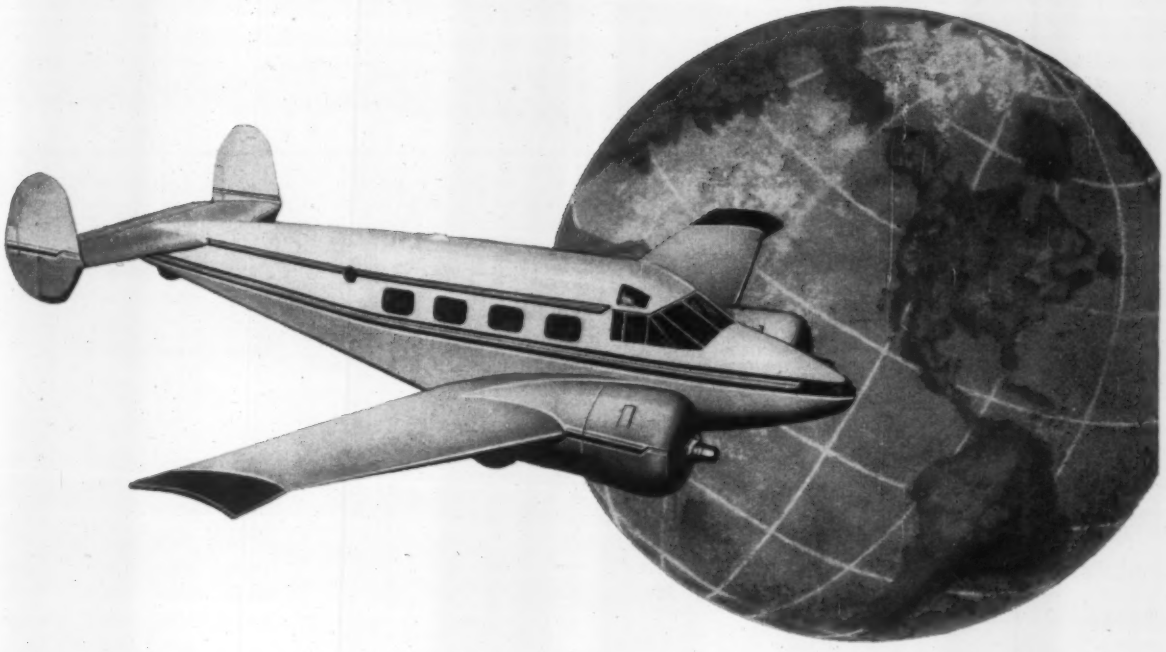
The bids on the three bridges shaped up like this:

		3-span, prestress girders 53'x30' skew	68'x30'	68'x30'
1	Meyer Bros., Inc., and Torvik & Sons, Decorah, Iowa	$75,825	$102,397	$105,878
2C	W. Hodgman & Sons, Inc., Fairmont, Minn	79,326	103,835	106,870
8	S. J. Groves & Sons Co., Minneapolis, Minn.	.....	115,450	
9	J. C. Feller, Rochester, Minn.	92,465	nb	118,533
EE	Minnesota State Highway Dept., St. Paul	84,005	109,859	112,323

Bids: 5-9-58

Items	Unit	Quantity Bri 9104	Bri 9105	Bri 9106	Unit Prices 1	2C
Test piles, untreated timber, 40'	ip ea	4	.....	.....	$250.00	$165.00
40'	ip ea	.....	.....	2	275.00	165.00
35'	ip ea	.....	2	.....	200.00	150.00
50'	ip ea	.....	.....	2	350.00	175.00
Piling, untreated timber	del lf	960	.....	.....	1.15	1.85
	del lf	.....	1,450	.....	1.15	1.70
	del lf	.....	.....	1,960	1.20	1.75
	drive lf	896	1,334	1,848	1.20	1.00
Approach curb, timber	ea	4	4	4	50.00	50.00
Conc girders, prestressed	ea	21	.....	.....	800.00	900.00
	ea	.....	30	30	1,100	1,100
Name plates, std	ea	2	1	1	30.00	40.00
Sheet copper	lb	71	70	70	2.00	2.25
Reinforcement bars	lb	89,756	61,600	61,600	0.14	0.14
Conc mix #1A6	cy	139.5	105	105	55.00	62.00
#3Y6	cy	236.8	387.7	387.7	65.00	68.00
#3Y6, grade Y	cy	13.8	.....	.....	200.00	200.00
	cy	.....	15	15	200.00	175.00
Excavation,cl DE	cy	198	135	135	5.00	5.00
cl WE	cy	110	.....	.....	20.00	25.00
cl WE	cy	.....	165	195	20.00	22.00
Test piles, treated timber, 50'	ip ea	2	.....	.....	350.00	200.00
60'	ip ea	.....	4	.....	425.00	250.00
65'	ip ea	2	.....	.....	500.00	300.00
65'	ip ea	.....	.....	4	500.00	275.00
Piling, treated timber	del lf	1,710	1,300	1,430	1.90	2.20
	drive lf	1,638	1,248	1,378	1.40	1.00
Rip rap, random	cy	100	135	135	4.75	8.00
hand placed	cy	195	270	270	9.50	10.00
Wrought bronze	lb	432	450	450	1.50	1.50
Structural steel	lb	12,868	16,480	16,480	0.50	0.45
Waterproofing, 3 ply joint	lf	12	.....	.....	1.00	4.00
	lf	.....	97	97	1.00	2.00
Shoulder drains, F&E metal	ea	.....	2	2	150.00	110.00
Pipe flume, F&E metal, 12"	lf	.....	100	100	2.70	3.50
Conc erosion contr struct	cy	.....	0.79	0.79	100.00	200.00

Commence about 6-20-58. Completion schedule, bridges & riprap: 150 days. Liquidated damages: $100 cal day
Additional 30 day allowance for work which may be completed after contract completion date. Liquidated damages after 180 days: $25 cal day



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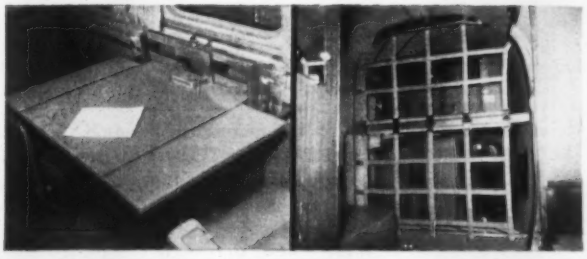
The 1958 Beechcraft Super 18 is designed to provide Men of Decision with the ultimate in quiet, restful surroundings as they speed to new and broader business opportunities.



Completely private passenger lounge and private lavatory, luggage and pilot compartments are distinctive advantages of Super 18 ownership. At speeds up to 234 miles per hour, miles melt into productive minutes inside your own executive transport.

But the advantages of complete privacy, of walk-around comfort, of having the entire continent at your command are just a few of the reasons why the Super 18 is the most popular airplane of its type in the world.

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- Cement, Aggregates, Ready-mixed Concrete, Asphalt: Last, Aug. 7; Next, Sep. 4.
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All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft. (Prices in italics)

	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 R.L.	6x12 R.L.	12x12 R.L.	LONG LEAF Y. P. Merchantable grade up to 20 ft. 2x12 R.L.	LONG LEAF Y. P. Merchantable grade up to 20 ft. 12x12 R.L.	PLYWOOD Rail freight increment (See note for base price) 3/8"	PLYWOOD Rail freight increment (See note for base price) 3/4"
Atlanta † Baltimore * Birmingham † Boston ‡ Chicago ** Cincinnati * Cleveland ** Dallas ‡‡ Denver * Detroit ‡ Kansas City § Los Angeles 1 Minneapolis # Montreal ab New Orleans † New York § Philadelphia ‡ Pittsburgh 2 St. Louis # San Francisco 1 Seattle † Toronto a	**$73.00** **95.00** *105.00g* **80.00** *70.50* **98.00f** *101.00k* **103.00** *111.00* **93.00** *98.00* **88.00** *74.50* *Not in stock* **124.50** *153.00* **120.00** *120.00* *92.00* *135.00m* **87.00** *105.00* **87.00** *105.00* **108.00** **119.00** *121.00* *88.00* *68.00* **92.50** *118.00*	**$76.00** **100.00** *108.00g* **82.00** *70.50* **98.00f** *101.00k* **106.00** *111.00* **94.25** *98.25* **90.00** **74.50** *122.50* **127.00** *155.00* **120.00** *120.00* *92.00* *135.00m* **94.00** *105.00* **87.00** *105.00* **109.00** Range from 100/120 *Range from 110/110* **120.00** *135.00* **121.00** **129.00d** *159.00* *88.00* *70.00* **93.50** *118.00*	**$76.00** **100.00** *108.00g* **75.00** *67.00* **107.00f** *120.00* **100.00** *124.00* **86.50** *97.50* **90.00** *100.00* **70.00** *122.50* **123.75** *135.75* **120.00** *120.00* *92.00* *140.00* **87.00** *105.00* **90.00** *94.50* **120.00** *125.00* **125.00** *145.00* **129.00d** *159.00e* *88.00* *75.00* **90.75** *120.00*	**$79.00** **100.00** *108.00g* **82.00** *70.00* **109.00f** *120.00* **114.00** *122.00* **90.50** *99.50* **97.00** *100.00* **70.00** *122.50* **125.00** *140.50* **120.00** *120.00* *92.00* *140.00* **88.00** *105.00* **91.00** *115.00* **122.00** *126.00* Range from 100/120 *Range from 110/110* **125.00** *145.00* **129.00d** *159.00e* *88.00* *75.00* **90.00** *125.00*	**$81.00** **100.00** *108.00g* **85.00** *70.00* **109.00f** *120.00* **122.00** *122.00* **95.00** *100.25* **97.00** *99.00* **73.00** *122.50* **130.00** *138.00* **125.00** *140.00* **104.00** *105.00* **90.00** *115.00* **122.00** *126.00* **120.00** *140.00* **129.00e** *159.00e* *88.00* *75.00* **90.00** *120.00*	**$86.00** **105.00** *108.00g* **90.00** *85.00* **116.00a** *119.00* **123.00** *123.00* **102.75** *111.25* **101.00** *101.00* **75.50** *127.50* **130.00** *143.00* **138.00** *145.00* **125.00** *140.00* **105/125** *115/115* **145.00** *146.00* **134.00e** *145.00e* *99.00* *80.00* **90.00** *142.00*	**$136.00** **114.00** *158.00g* **105.00** *75.50* **116.00** *126.00* **118.00** *151.00* **116.00** *125.50* **120.00** *136.00* **130.00** *198.00* **135.00** *180.00* **105/125** *125/150* **145.00** *166.00* **195.00e** *195.00e* *115.00* *92.00* **90.00** *170.00*	..... *$155.00* *70.50* *132.00* *151.00* *125.50* *148.50* *208.00* *225.00* *195.00* *188.00* *147.50* *170.00* *168.00* *168.00* *195.00* *115.00* *98.00* *170.00*	..... *$149.00* *70.50* *132.00* *151.00* *125.50* *148.50* *208.00* *225.00* *195.00* *188.00* *147.50* *170.00* *168.00* *168.00* *195.00* *115.00* *98.00* *170.00*	**$121.00** **170.00** **115.00** ..... **148.00** **129.80** ..... **130.00** **138.00** ..... **122.00** **181.00** **250.00** **214/224** **140.00** **92.00**	**$156.00** **185.00** **160.00** ..... **148.00** **127.80** ..... **125.00** **122.00** **181.00** **260.00** **214/224** **168.00**	**$22.32** **28.92** **21.78** **28.92** **22.45** **25.00** **25.37** **18.72** **13.92** **25.00** **16.56** **16.61ab** **19.89** **18.72** **25.92** **28.00** **25.92** **18.72** **12.22**	**$27.24** **31.60** **26.58** **31.60** **27.37** **30.48** **30.93** **22.80** **16.98** **30.48** **20.16** *20.25ab* **24.25** **22.80** **31.60** **31.60** **22.80** **14.91c**

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PLYWOOD (Plyform, oiled and edge sealed): Douglas fir, 4' x 8' panels, 5-ply sanded 2 sides, carload lots, delivered per 1000 sq. ft. surface. Seattle base price, Interior, moisture resistant, 3/8", $166.00; 1/2", $186.00. Exterior, waterproof, 3/8" $170.00; 1/2", $190.00. For other centers add rail freight increment from table on proper size. *a Lower rate by water shipment. *b 50,000 lbs. minimum.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Feb. 1, 1950a Single or Double Strength A quality	WINDOW GLASS Discounts from jobbers list, Feb. 1, 1950a Single or Double Strength B quality	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta	78%c	78%c	$0.2615
Baltimore	74%d	76%d	.2615
Birmingham	82%	83%	.2465
Boston	72-10%	72-10%	.2615
Chicago	72%	72%	.2615
Cincinnati	74%	74%	.2615
Cleveland	74-2-10%	74-2-10%	.3015
Dallas	76%	76%	.2690
Denver	74%	74%	.2665
Detroit	74-10-10%	74-10-10%	.2615
Kansas City	74-10-10%	74-10-10%	.2665
Los Angeles	70%	76%e	.2640
Minneapolis	71-10%	71-10%	.2665
Montreal	40-10-5%bc	40-10-5%b	22.05h
New Orleans	75%	76%	.2665
New York	79-10%	79-10%	.45g
Philadelphia	74-10%	75-10%	.2615
Pittsburgh	72%	72%	.2615
St. Louis	72-10-10%	72-10-10%	.2665
San Francisco	60%-25%	68%-25%	.2615
Seattle	67%	72%	.2640

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U. S., $1.75 per 100 lbs. higher in Canada.

Glass: *a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b sales tax extra. *c 77% or single strength. *d Discount 6/15/52. *e 77% for double strength.

Explosives: * Cartridges of 1 1/4", 1 1/2", 1 3/4", 2", 2 1/4", 2 1/2", 3" diameters. Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h F.o.b. Bellowell (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.80

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E of the Miss., except Fla and Me	$0.2065	$0.2465	$0.2615
W of Miss. to Rocky Mtn. States, Fla. and Maine	.2115	.2515	.2665
Rocky Mtn. States	.2115	.2515	.2665
Pacific N. W. States	.2090	.2490	.2640
Pacific S. W. States	.2065	.2465	.2615

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	By Rail Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.—2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.—2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.—2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in.—3-ft. from butt	5-in.	91 to 100-ft.	....	....
14-in.—2-ft. from butt	6-in.	50 to 69-ft.	.50/68	....
14-in.—2-ft. from butt	6-in.	70 to 79-ft.	.78/.88	.93
14-in.—2-ft. from butt	5-in.	80 to 85-ft.	.88/93	.94
14-in.—2-ft. from butt	5-in.	85 to 89-ft.	....	1.00
14-in.—2-ft. from butt	5-in.	90 to 100-ft.	....	1.02

* Pine piling over 80-ft. available only in limited quantities

RAILWAY TIES

Prices f.o.b. per tie box carload lots:

		6" x 8" x 8' Untr.	6" x 8" x 8' Tr.	7" x 8" x 8'6" Untr.	7" x 8" x 8'6" Tr.
Birmingham*	Hardwood, Grade 3	$1.70	$2.55	Gr. 5 $2.25	$3.30
	Grade 2	1.50	2.35	" 4 2.10	3.18
	Grade 1	1.15	2.00	" 3a 1.70	2.78
Chicago	Red Oak		3.80a		4.40a
New York	S. L. Sap Pine	2.00	4.00	3.00	6.00g
	Mixed Oak	2.50	4.50	3.50	6.50g
Philadelphia	Red Oak	2.85/4.05	4.40/4.60	3.20/3.40	4.40/4.60
St. Louis	Mixed Oak	2.75	3.50a	3.00h	3.75h
San Francisco	Douglas Fir	1.91ef	2.80ef	2.69ej	4.07ej

Tr.—Treated; Untr.—Untreated. a Creosoted. c Empty cell. e Open f.o.b. cars. g 7 x 9 x 8' 6" * Add 75c/tie freight charge to Birmingham. *h 7" x 9" x 9 1/2"

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.11
Calcium chloride, 77-80%, flaked, 100-lb. paper bag, f.o.b. works, ton	31.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb	2.65
Soda ash, 58%, in paper bags, per 100 lb. dense	1.90
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	2.05
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	11.05

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COMPANY_____

ADDRESS_____

CITY_____ STATE_____

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

Vt., Burlington—BA 9/3—City Bd. Street Comrs., City Hall, sewage disposal plant, incl. sludge digestion tanks, North End. $400,000. Plans deposit $35, interceptor sewer, incl. River Crossing, etc. between Bradley Rd. and proposed sewage treatment plant, $140,000. Plans deposit $20. Whitman & Howard, Inc., 89 Broad St., Boston, Mass., engrs. CD 6/18/57.

BUILDINGS—BA

▲ **R. I., Barrington**—SCHOOL—BA 8/26—Town, Town Hall, Junior High School, Middle Hy and Lincoln Ave. $1,100,000. Plans deposit $100. Harkness & Geddes, 17 Custom House St., Providence, archts. CD 7/3/57.

▲ **Conn., Bridgeport**—SCHOOL—BA 9/3—Town of Bridgeport, Bd. Educ., 804 Main St., 66,000 sq. ft. North End Elementary School, Reservoir Ave., $1,000,000. Plans deposit $100. J. Gerald Phelan, 211 State St., archt. Fletcher Thompson, Inc., 211 State St., engr. CD 8/6.

▲ **Conn., New Haven**—HOUSING—BA 9/5—New Haven Housing Auth., 195 Church St., Proj. MR-65, 154 units, 24 buildings, housing Eastern St., $2,420,000. Pedersen & Tilney, 119 Whitney Ave., archts. Jerome F. Mueller, 51 Lewis St., Hartford, engr.

Mass., Hingham—SCHOOL—BA 9/11—Town Junior High School Planning & Constr. Comn., 229 North St., Junior High School addn., alterations. $600,000. Plans deposit $75. J. Williams Beal & Sons, 185 Devonshire St., Boston, archts. CD 2/24.

BUILDINGS—SLC

Mass., West Concord — PLANT — International Business Machines Corp., Supplies Div., 590 Madison Ave., New York, N. Y., soon lets contract punch card manufacturing plant, Baker Ave. $200,000.

HEAVY CONSTRUCTION—LB & CA

MAINE—State Hy. Comn., State Office Bldg., Augusta, Me.—**Thos. DiCenzo**, Calais, Me. CA **$263,305.** (3 bidders), bit. grav. road 2.633 mi. FASP No. S-0319 (6), Dyer Brook; CA **$251,386,** (4 bidders), b. conc. 1.374 mi. FAP No. DF-026-2 (7), Rockport;
Me.—**H. E. Sargent, Inc.**, Stillwater, Me. CA **$254,614.** (6 bidders), b. conc. 2.893 mi. FAP No. F-026-2 (5), Stockton Springs and prospect. Bids Aug. 6. Grand total $769,304.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Central Constr. Co. of Lawrence, 74 Beacon St., Lawrence, Mass. and **The Henley Lundgren Corp.,** 193 Hartford Pike, Shrewsbury, Mass. (joint venture). CA **$1,042,450.** By-Pass, incl. 2 bridges Rte. 3, FA Proj. DF-336 (5), Kingston and Plymouth. Bids July 8. CD 7/10, under LB.

M. Solimando, 584 Columbia Rd., Dorchester, Mass. LB **$494,844,** est. $500,000. Contr. 1093 artificial ice skating rink arena, Broadway and Revere Beach Parkway, Revere, MASSACHUSETTS, Commonwealth of Mass., Parks Div., 20 Somerset St., Boston, Mass. Bids Aug. 6. CD 7/2.

Shamrock Constr. Co., 78 Park St., Chelmsford, Mass. LB **$184,568,** est. $200,000. road constr., LEXINGTON, MASS. Town, Bd. Selectmen, Town Office Bldg., Lexington, Mass. Whitman & Howard, Inc., 89 Broad St., Boston, Mass., engr. CD 6/13.

† **Thomas C. Vincent, Inc.,** 327 Northrop Ave., Mamaroneck, N. Y. LB **$115,800.** rehabilitation Boiler House No. 2 U. S. Naval Supply Depot, NBy 19180, Spec. 19180/58, NEWPORT, R. I. First Naval Dist., 495 Summer St., Boston, Mass. J. M. McCusker Assoc., 17 Chestnut St., Jamaica Plain, Mass., engrs. Bids July 31. CD 7/14.

▲ **CONNECTICUT**—Comr. State Hy. Dpt., State Office Bldg., Hartford, Bids opened 8/11,
Brunalli Constr. Co., Summer St., Southington, Conn., LB **$4,940,683** (9 bidders) grading, drainage, lighting, traffic control, concrete paving 11,146 lin. ft. Route 8, Proj. 87-67, Naugatuck. CD 7/24.

BUILDINGS—LB & CA

C. Profenno Co., 127 Marginal Way, Portland, Me. LB **$452,300.** HIGH SCHOOL, off Merrill Ave., GORHAM, ME. Town, Bldg. & Planning Comn., Gorham, Me. Bids Aug. 5. CD 7/30.

▲ **Towns of Concord and Carlisle, Regional School Dist.,** Concord High School Auditorium, Stowe St., Concord, Mass., bids Aug. 5 returned unopened, Regional HIGH SCHOOL, Rte. 2 and Walden St., CONCORD, MASS. **$2,225,000.** CD 6/10.

Campanelli Brothers, Inc., Nicholas Rd., Framingham, Mass., CA **$400,000.** RESIDENTIAL DEVELOPMENT, "Longfield" Rte. 126, FRAMINGHAM, MASS. Martin Cerel, 18 E. Central St., Natick, Mass.

Conti & Donahue, Inc., 239 Commercial St., Lynn, Mass. CA **$350,000.** CHURCH, METHUEN, MASS. St. Lucy's Roman Catholic Church, c/o Chancery Office, 1 Lake St., Methuen, Mass. Bids July 30. CD 7/18.

▲ **Jordan Hospital,** Sandwich St., Plymouth, Mass., rejected bids July 11, HOSPITAL, PLYMOUTH, MASS. LB **$1,365,456.** Will re-advertise. CD 7/18, under LB.

▲ **Boston Lying-In Hospital,** 221 Longwood Ave., Roxbury, Mass., rejected bids July 17, RESEARCH LABORATORY KITCHEN and CAFETERIA, Longwood Ave., ROXBURY, MASS. LB **$1,149,547.** CD 7/22, under LB.

Patrick J. O'Leary Bldg. Co., Inc., 3 Pleasant St., Decham, Mass. LB **$350,000.** Catholic Memorial HIGH SCHOOL, WEST ROXBURY, MASS. The Brothers of the Christian Schools of Ireland, Provincial Headquarters, 21 Prayer Terrace, New Rochelle, N. Y. Bids Aug. 5. CD 7/18.

▲ **Aquadro & Cerruti, Inc.,** Texas Rd., Northampton, Mass., CA **$1,680,000.** SYSTEM HEADQUARTERS OFFICE, Brush Hill Ave., WEST SPRINGFIELD, MASS. Western Massachusetts Electric Co., 45 Federal St., Greenfield, Mass. Bids Aug. 7. CD 8/2.

Louis Desi, Third Ave., Hotchkiss Grove, Branford, Conn., Owner Builds. **$350,000.** 30 HOUSES, Mile Dr., BRANFORD, CONN. CD 6/11.

Louis Desti, 3 Ave., Hotchkiss Grove, Branford, Conn. Owner Builds. **$500,000.** 20 HOUSES, at Town Line, BRANFORD, CONN.

▲ **Giordano Constr. Co.,** 287 Main St., Branford, Conn., LB **$2,483,000,** HIGH SCHOOL, King St., BRISTOL, CONN. Town of Bristol, Bldg. Comn., Memorial Dr., Bristol, Conn. Bids July 31. CD 7/10.

▲ **Dan Deering Co.,** 209 Main St., Norwalk, Conn., CA **$2,012,000** HIGH SCHOOL, DARIEN, CONN. Town of Darien, Supt. Schools, Renshaw Rd., Darien, Conn. Bids July 23, awarded Aug. 8. CD 7/28, under LB.

▲ **Jerome C. Kelter, Jr.,** 1007 Farmington Ave., West Hartford, Conn., Owner Builds, **$1,860,000,** 186 HOUSES, "Sunset Hills," Arbutus St., EAST HARTFORD, CONN.

Natick Homes, Inc., 742 Asylum Ave., Hartford, Conn., Owner Builds, **$490,710,** 33 HOUSES, "Ellington Estates", ELLINGTON, CONN. CD 6/11/56.

Dwight Building Co., 109 Sanford St., Hamden, Conn., CA **$400,000,** 2 story, 100 x 200 ft. 40,000 sq. ft. WAREHOUSE, OFFICE, GARAGE, Skiff St., HAMDEN, CONN., New Haven Water Co., 100 Crown St., New Haven, Conn. CD 7/17.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways **$44,000;** other public works $73,000; industrial buildings **$93,000;** other buildings **$344,000. Also Foreign projects of $100,000 and more in size of Interest to American contractors.**

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED
New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West
PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

Wm. J. Lyons Constr. Co., 2 Wilton Ave., Norwalk Conn., CA **$567,900** Walnut Beach Elementary SCHOOL, MILFORD, CONN. Town, Milford, Conn. CD 7/17.

Harlaco, Inc., 185 Front St., New Haven, Conn. CA **$750,000.** 2 story, 80x265 ft., fire resistant, steel frame, concrete floors, acoustical ceilings, cinder block and brick OFFICE and COMMERCIAL BLDG., 10 stores, NEW HAVEN, CONN. College Plaza, Inc., c/o Geo. Di Cenzo, atty., 633 Howard Ave., New Haven, Conn. CD 4/23.

Conn. Boiler Heating & Plumbing Co., 694 Oak Wood Ave., West Hartford, Conn. LB **$145,387.** (7 bidders) BOILER HOUSE addn. auxiliaries, piping, Proj.BI-K-105D Norwich, State Hospital, NORWICH, CONN. State P. Wks. Dpt., 165 Capitol Ave., Hartford, Conn., Bids Aug. 6. CD 7/22.

▲ **Bregman Constr. Corp.,** 250 East 43 St., New York, N. Y. CA **$1,622,000,** Proj. BL-D-212 CLASSROOM BUILDING, University of Conn., STORRS, CONN. State P. Wks. Dpt., 165 Capitol Ave., Hartford, Conn. Bids July 16. CD 7/18, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

Pa., Phila.—BA 8/26—Dpt. Procurement, City Hall Annex, Bid 2094, furnishing, installing ventilation sys. for west wall of Northeast Sewage Pumping Station and appurtenant electrical work. CD 5/20.

Pa., Phila.—BA 8/26—Dpt. Procurement, City Hall Annex, Bid 2092, water mains (RELAY-NON-ASSESSABLE) in Bainbridge St. from 3 to 5th Sts. 12th St., from Spring Garden to Vine Sts., Girard Ave. from Broad St. to Corinthian Ave.; Bid 2093, water mains NON-ASSESSABLE) in Ashburner St. from State Rd. to Torresdale Ave. Plans deposit $10. CD 3/22/56.

† **Md., Carderock**—ELECTRIC POWER SUB-STATION, etc.—BA 9/3—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C., extension of capabilities of supersonic test facility at David W. Taylor Model Basin, incl. 2 story, bsmnt., addn. and electric power sub-station. $250,000-$500,000.

N. Y., Buffalo—BA 9/4—Erie County Water Auth., 338 Ellicott Square Bldg., Zone 3, intake and intake tunnel for Sturgeon Point Filtration Plant at Sturgeon Point, Town of Evans, Erie Co. Plans deposit $30. Buck, Seifert & Jost, 112 E. 19th St., New York, Zone 3, consult. engrs., adv. ENR 8/21. CD 8/7, under LB.

BUILDINGS—BA

Pa., Waterford—SCHOOL—BA 8/26—Pa. State Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, high school bldg. admin. for Fort LeBoeuf Jt. School Bd. $500,000. Plans deposit $25. Freeburg & Linquist, 16 E. 4th St., Jamestown, N. Y., archts. CD 7/1, under LB.

▲ **D. C., Wash.**—DORMITORY—BA 8/28—Georgetown University, 37th and O Sts. N. W., men's dormitory, cafeteria. Walton & Maddon, 3510 Rhode Island Ave., Mt. Rainier, Md., archts. CD 12/14/56.

N. Y., New York—HOSPITAL—BA 8/29—Beth Israel Hospital, Stuyvesant Sq. E. and 17 St., Zone 3, 6 story hospital addn. $500,000. Schuman & Lichtenstein, 369 Lexington Ave., Zone 17, archts. CD 3/28.

Pa., Norristown—BOILER PLANT—BA 9/10—General State Auth., 18th and Herr Sts., Harrisburg, alter old boiler plant for central stores and shops at Norristown State Hospital. $400,000. Plans deposit $10. Sanders & Thomas Assocs., Security Trust Bldg., Pottstown, archts.-engrs. CD 2/25/57.

Pa., Spring City—KITCHENS, etc.—BA 9/10—General State Auth., 18th and Herr Sts., Harrisburg, alter kitchens and dining rooms at Pennhurst State School. $640,000. Plans deposit $10. Sanders & Thomas Assocs., Security Trust Bldg., Pottstown, archts.-engrs. CD 2/25/57.

▲ **N. J., Newark**—HOSPITAL—BA 9/15—Bd. Trustees St. James Hospital, 142 Elm St., hospital. $3,000,-000. Anthony De Pace, 151 W. 46 St., New York, N. Y., archt. CD 7/10.

BUILDINGS—SLC

▲ **N. Y., Olean**—Y.M.C.A.—Young Men's Christian Assn., Olean, soon lets contract Y.M.C.A. Bldg., $1,194,000. Thomas K. Hendryx, Bradford, Pa., archt. CD 1/16/57.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—State Dpt. P. Wks., Gov. Alfred E. Smith State Office Bldg., Albany,
Mount Vernon Contg. Corp., 439 N. Terrance Ave., Mount Vernon, N. Y. CA **$10,609,287.** 3.73 mi. 6-lane divided Elmsford section, Cross-Westchester Expressway, extending from State Thruway's Elmsford interchange eastward to western terminus of Expressways, White Plains Section already under contract, incl. 5.85 mi. local service roads, access ramps, traffic interchange facilities between Expressway and Thru-

way, incl. 13 bridges, Westchester Co. Bids June 26. CD 6/30, under LB.

NEW YORK—State Dpt. P. Wks., Gov. Alfred E. Smith State Office Bldg., Albany. Bids opened Aug. 7, West Shore Concrete Co., Hillburn St., Suffern, N. Y. LB $821,445, est. $830,000. (only bidder), reconstr. 2.99 mi. section Rte. 32 starting Vails Gate to Newburg city line, Orange Co. CD 7/28.

▲ Malan Constr. Corp., 2 Park Ave., New York 16, N. Y. LB $2,059,000. (7 bidders), general constr. heating, ventilating, and air-conditioning, plumbing, electric, sewage treatment, site development, pedestrian overpass and pedestrian walkway for erection of restaurant and two gas stations, State Thruway, Erie Section, NEW YORK. State Dpt. P. Wks., State Office Bldg., Albany, N. Y. Bids Aug. 7.

The Whiting-Turner Contg. Co., Patapsco Tunnel, Baltimore, Md., LB $176,405 (5 bidders), lowering and replacing upper and lower miter sills and installation of two new lock gates at Lock 16 on Erie Barge Canal, near St. Johnsville, Montgomery Co., NEW YORK. Dpt. P. Wks., State Office Bldg., Albany, N. Y. Bids Aug. 7. CD 7/11.

▲ Federal Pacific Electric Co., 5815 3rd St., San Francisco, Calif., CA $2,690,365, combination Sch. 2 and 3, 24,230 kv. power circuit breakers for Niagara Switchyard in Lewiston, Niagara Co., Contr. NL-20, NEW YORK. Power Auth. of New York. The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids July 22. CD 7/24, under LB.

Castleton Contg. Co., 2199 Forest Ave., Staten Island 3, N. Y., CA $86,097, regulating, grading, Leeds St. from Guyon to Adelaide Aves.; b. conc. paving concrete curb and sidewalks on both sides retaining wall where necessary in Adelaide Ave. from Hylan Blvd. to westerly line of Leeds St. and other streets, NEW YORK. President Richmond Boro, Boro Hall, St. George 1, N. Y. Bids July 18.

† L. Johnson Constr. Co., 608 Forshay Tower, Minneapolis, Minn., CA $733,606, breakwaters and dredging of Barcelona Harbor from entrance channel and harbor, Dunkirk, Chautauqua Co., NEW YORK, U. S. Eng. Engineer Park, Buffalo 7, N. Y. Bids June 17, awarded June 30. CD 6/23, under LB.

† Lavigne & Smith, Inc., 1500 Elm St., Stratford, Conn., LB $57,112, dredging to depth of 12 ft. at mean low water involving removal approx. 48,400 cu. yd., place measurement, of all material except ledge rock from Lake Montauk Harbor, CIVENG-30-075-59-5, NEW YORK. U. S. Eng., 111 E. 16th St., New York 3, N. Y. Bids July 18.

M. A. Bongiovanni, P.O. Box 147, Colvin Station, Syracuse, N. Y., CA $423,176, interceptor sewer Contr. 11A, BINGHAMTON, N. Y. City, Dpt. Purchase, Bd. Contract & Supply, Municipal Bldg., Binghamton, N. Y. Bids July 16. CD 6/24.

▲ Andrew Calafano Co., Inc. & Grow Constr. Co., 8843 76th Ave., Glendale, N. Y. LB $5,098,881. Contr. 2A, Kent Ave. Intercepting sewer, Ash St., Commercial St., West St., Greenpoint Ave.; Contr. No. 2B, Kent Ave. Intercepting sewers, greenpoint Ave. and Franklin St. for Newtown Creek Pollution Control Proj., Brooklyn Boro, BROOKLYN, N. Y. Dpt. P. Wks., Municipal Bldg., Brooklyn 7, N. Y. Bids July 22. CD 6/25.

Gowanda Village, Village Hall, Gowanda, N. Y., rejected bids July 14, trunk sewer lines and treatment plant, GOWANDA, N. Y. CD 6/24.

George Patti, Inc., 1101 Monroe St., Jamestown, N. Y., CA $99,619, sewer line and pumping station in Fluvanna Ave., JAMESTOWN, N. Y. City, City Hall, Jamestown, N. Y. Awarded Aug. 4. CD 2/14/45.

Davidson Elec. Co., Inc., 1265 Atlantic Ave., Brooklyn, N. Y., LB $104,493 (5 bidders), furnishing, installing telephone cable and equip. for rehabilitation of Myrtle Ave. elevated line BMT Div., Contr. No. ML-111, Brooklyn and Queens Boros, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Aug. 1. CD 7/23.

NEW JERSEY—State Hy. Dpt., Kenneth D. Rice, secy., 1035 Parkway Ave., Trenton,

Ole Hansen & Sons, Inc., Old Turnpike and Franklin Ave., Pleasantville, N. J., CA $848,606, dualization 3.825 mi. U.S. Rte. 322 from Rte. 50 to McKee City, Fed. Proj. No. F-105 (8), Atlantic Co. Bids July 8, awarded Aug. 5. CD 7/18, under LB.

PENNSYLVANIA—Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg,

McCormick Contg. Co., 22 N. Grove St., Lock Haven, Pa. CA $697,743. 17,084 ft. c. conc. 24 ft. wide T.R. 220, Monroe Borough, Monroe and Towanda Twps. Bradford Co. Bids July 11, CD 7/16, under LB.

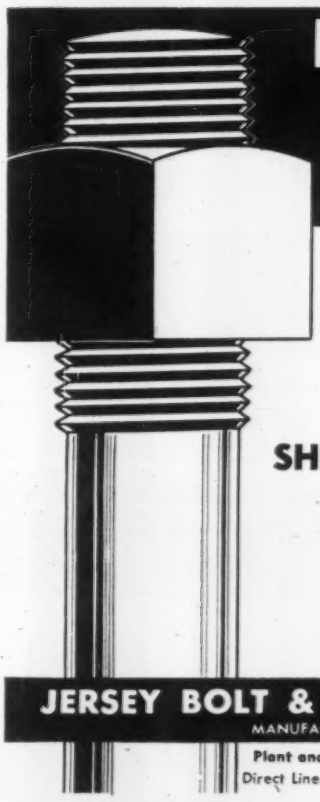
Curro Constr. Co., 4160 Glenridge Rd., Cleveland 21, O. CA $692,334, Div. M Kearsarge laterals, ERIE, PA. Millcreek Twp. Sewer Auth., 2628 Colonia Ave., Millcreek Twp., Pa. Bids Mar. 20, awarded July 1. CD 4/21, under LB.

▲ MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2.

Md.—Allied Contractors, Inc., 204 E. Preston St., Baltimore 2, Md., LB $543,562 (2 bidders) two 3-span steel beam bridges over B. & O. R.R. on 16 St. M-572-3-320 and M-527-4-320, near Silver Spring, Montgomery Co.;

Md.—Gale Constr. Co., Galesville, Md., LB $98,415 (5 bidders) 3-span steel WF beam bridge on northbound lane of U. S. 301 over Western Branch, P-713-5-320, Prince George Co.;

Md.—George & Lynch, Inc., Delaware Trust Bldg., Wilmington, Del., LB $265,779 (2 bidders) modification of east approach of Chesapeake Bay Bridge, BRB-439, Queen Anne Co. Bids Aug. 5. CD 7/23.



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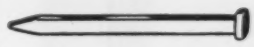

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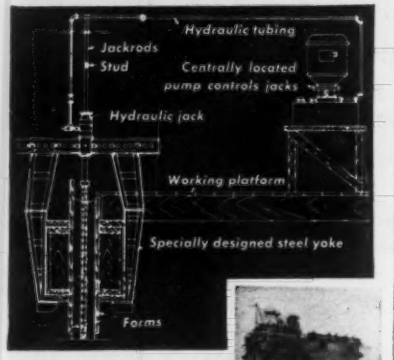

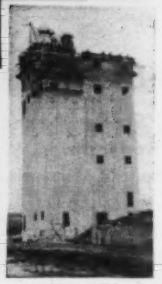

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MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Bituminous Constr. Co., 3301 Ridgewood Ave., Baltimore 15, Md., LB $160,733 (3 bidders) P-713-6-320, resurf. 7.245 mi. U.S. 301, Marlboro By-Pass, Prince George Co. Bids Aug. 5. CD 7/22.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
John D. Sheetz Constr. Co., Halethorpe, Md., LB $85,137 (5 bidders) 2-span bridge Rte. 2, AA498-2-520, near Annapolis, Anne Arundel Co.

National Paving & Contg. Co., 4200 Menlo Dr., Baltimore 15, Md., LB $116,323 (7 bidders) Contr. 1513-S.A. sheet asphalt paving, BALTIMORE, MD. City, Bureau Hys., 303 Municipal Bldg., Baltimore 2, Md. Bids Aug. 6. CD 7/31.

R. F. Kline, Frederick, Md. LB $424,387. (3 bidders), 1.25 mi. River Rd., ½ mi. east of Seneca Creek and extending to Reddick Rd., FAP, 431 M-563-1-517, S-180 (S), Poolesville, ROCKVILLE, MD. Dir. P. Wks., Montgomery Co., County Office Bldg., Rockville, Md. Bids Aug. 7. CD 7/14.

▲† **John C. Grimberg Co., Inc.**, 7624 Old Georgetown Rd., Bethesda, Md., and **Harrison Electrical Contractors, Inc.**, 1344 Maryland Ave. N. E., Wash., D. C. LB $2,316,000. (10 bidders), air-conditioning and electrical equipment at U. S. Government Printing Office, Contr. GS-R-3B-6269, WASH., D. C. General Services Admin., 7 and D Sts. S. W., Wash., D. C. Bids Aug. 8. CD 7/15.

† **Pullman-Standard Car Mfg. Co.**, 1025 Conn. Ave. N.W., Wash., D. C. LB $325,000 installing 4 passenger-carrying, electrically operated rail, cars, overhead conductor sys. and unit substation for new subway between the Senate Office Bldg. and U. S. Capitol Bldg., WASH., D. C. Office of the Architect of the Captiol, U. S. Capitol, Wash., D. C. Bids July 25. CD 5/29.

Corson & Gruman Co., 33 and K Sts. NW., Wash., D. C. LB $125,616 (4 bidders) covering various roadways with asph. surf. various locations (1st Fall Cover Contract 1958), WASH., D. C. D. C. Gov't Dpt. Hys., 499 Pa. Ave., N. W., Wash., D. C. CD 8/1.

Helsing Bros., Inc., 4207 39th St. N. W., Wash., D. C. CA $642,584. (4 bidders) paving roadway of Park Place between Kenyon St. and Rock Creek Church Rd. widening 5th St. from Rock Creek Church Rd. to Grant Circle; Warder St. between Irving St. and Rock Creek Church Rd. and 7th St. between Rock Creek Church Rd. and New Hampshire Ave., Fed. Aid Proj. S-68 (2), WASH., D. C. D. C. Govt., Dpt. Hy. 499 Pa. Ave., N. W., Wash., D. C. Bids July 7. CD 7/11.

DELAWARE—State Hy. Dpt., R. A. Haber, ch. engr., Rm. 202, Hy. Admin. Bldg., Dover, Bids opened 7/30,
Del.—**Cities Service Bit. Co.**, 1317 Gov. Pr. Blvd., Wilmington, Del., LB $99,510 (6 bidders) Contract 1723, surf. treatment resurf. program, New Castle Co.;
Del.—**Edgell Constr. Co. Inc.**, Dover, Del. LB $202,569 (8 bidders) Contract 1714, bank run hot mix. b. conc. patching and resurf., Kent Co.;
Del.—**Delmarva Asphalt Co., Inc.**, Seaford, Del. LB $324,284. (2 bidders) Contract 1725, surf. treatment resurf. program, Sussex Co.

▲ DELAWARE—State Hy. Dpt. R. A. Haber, ch. engr., Rm. 202 Hy. Admin. Bldg., Dover, Bids opened 8/6,
Del.—**Di Sabatino Bros.**, 500 N. Hawley St. Wilmington, Del., LB $229,275 (14 bidders) Contr. 1713, regular hot mix c. conc. patching and resurf. New Castle Co.,
Del.—**Standard Bitulithic Co.**, foot of Brill St., Newark, N. J. LB $76,517, (7 bidders) Contr. 872, 13 ft. bit. surf. treated widening to existing 9 ft. c. conc. roadway 4.157 mi. Bay Rd. to Little Creek. Fed. Aid Proj. S-17-(4) Kent Co.,
Del.— **Wilson Contrg. Co.**, Dupont Blvd. and State Rd., New Castle, Del., LB $1,097,349. (4 bidders) Contr. 1324 constr. divided hy. with 9 ft. c. conc. divided by 22 ft. and 50 ft. median U. S. Route 113 Lockerman St. to Collins Curve 3.831 mi. Fed. Aid Proj. F-SF-58 (3), Kent Co., CD 7/28.

BUILDINGS—LB & CA

Audubon Park Bldg. Corp., 12 E. 41 St., New York, Zone 17, N. Y., Owner Builds, $500,000, 6 story APARTMENT, 31-35 Eastern Parkway, BROOKLYN, N. Y. George Miller, 125 W. 45th St., New York 19, N. Y., archt. CD 6/9.

▲ **John T. Brady & Co., Inc.**, 606 W. 47th St., New York 19, N. Y., CA $1,392,000, general constr., plumbing and drainage, heating and ventilating, electrical work and lighting fixtures for PUBLIC SCHOOL 46, Clermont Ave. and Adelphi St. between Myrtle and Park Aves., Brooklyn Boro, BROOKLYN, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids July 17. CD 7/24, under LB.

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y., CA $1,534,000, general constr., plumbing, and drainage, heating and ventilating, electric work and lighting fixtures for PUBIC SCHOOL 299, Exergreen Ave. between Woodbine and Madison Sts., Brooklyn Boro, BROOKLYN, N. Y. Bureau Constr. Bd. Educ., 42-15 Crescent St., Long Island City, N. Y. Bids June 24. CD 7/11, under LB.

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn, N. Y., CA $1,477,000, general constr., plumbing and drainage, heating and ventilating, electrical work and lighting fixtures PUBLIC SCHOOL 298, Glenmore Ave. and Watkins St., Brooklyn Boro, BROOKLYN, N. Y. Bd. Educ. Bureau Constr. 42-15 Crescent St., Long Island City 1, N. Y. Bids July 22. CD 7/24, under LB.

▲ **Park Plaza Apartments, Inc.**, 16 Court St., Brooklyn 2, N. Y., Owner Builds, $1,000,000. 15 story 134-family APARTMENT and 40-car GARAGE, 210 Plaza St., BROOKLYN, N. Y. CD 4/4.

▲ **Roxie Gian Constr. Co.**, 210 Cornwall St., Buffalo 15, N. Y., CA $1,000,000, 2 story, penthouse 168x268 ft. sq. ft. STORE, CLARENCE, N. Y. Hens & Kelly, Inc., 478 Main St., Buffalo 2, N. Y. Stanley P. Podd, 361 Delaware Ave., Buffalo 2, N. Y., archt.

▲ **Levco Constr. Corp.**, 215 Montague St., Brooklyn, N. Y., LB $1,307,430 (11 bidders), general constr., heating, sanitary, electric, elevator, refrigeration and food service equip. work for modernization of BLDG. 8, Middletown State Homeopathic Hospital, Proj. No. 12654, MIDDLETOWN, N. Y. Dpt. P. Wks., State Office Bldg., Albany, N. Y. Bids July 17. CD 1/7/44.

▲ **Archmont Constr. Corp.**, 1845 Archer St., New York, Zone 61, N. Y., Owner Builds, $1,700,000, two 6 story APARTMENTS, Theriot Ave. southwest corner of Archer St., NEW YORK, N. Y. Seelig & Finkelstein, 153 Pierepont St., Brooklyn 2, N. Y., archts. CD 6/9.

▲ **Jackson Properties, Inc.**, 565 Fifth Ave., New York 17, N. Y., Owner Builds, $1,250,000, APARTMENT, 3615 E. 62 St., NEW YORK, N. Y. Leo Stillman, 332 E. 149th St., New York 51, N. Y., archt. CD 6/9.

Mambrino & Dilonardo, Inc., 1665 Williamsbridge Rd., New York 61, N. Y., CA Est. $153,000, 1 story FACTORY and WAREHOUSE, southside of Poplar St. from Blondell Ave. to Jarret Pl., NEW YORK, N. Y. 1525 Corp., 1525 Blondell Ave., New York 61, N. Y. Allan B. Bates, 2526 Webster Ave., New York 58, N. Y., archt. CD 6/9.

▲ **Nu-John Corp.**, 110-01 63 Dr., Forest Hills, N. Y., Separate Contracts, $2,250,000 7 story OFFICE and STORE, 140-146 E. 44 St., NEW YORK, N. Y. Paul Resnick, 654 Madison Ave., New York 21, N. Y., archt. CD 6/24.

Stuyvesant-Manhattan Corp., 15 E. 48th St., New York 17, N. Y., Owner Builds, $375,000, APARTMENT, 200-204 E. 17th St., NEW YORK, N. Y. Leo Stillman, 332 E. 149th St., New York 51, N. Y., archt. CD 6/9.

Louis Hajdu, Alpha, N. J., CA $787,366, reconstr. COURT HOUSE, BELVIDERE, N. J., Bd. Freeholders, Warren Co., Belvidere, N. J. Bids July 23, CD 7/31, under LB.

Frank Zwigard & Co., 10 E. Willow St., Millburn, N. J., CA $498,900, general contract CLASSROOM BLDG. on campus, off Springfield Ave., CRANFORD, N. J., Union Junior College, Cranford, N. J. Bids in July rejected. Target for completion Sept. 1, 1959. CD 7/3, under LB.

John W. Ryan Constr. Co., 11 W. 42 St., New York, N. Y., CA $600,000, 2 story EMPLOYEE BLDG., RESEARCH and MAIN BLDGS., on Rte. 202, Raritan Twp., SOMERVILLE, N. J. Ortho Products, Inc., 181 E. 75 St., New York, N. Y. S. P. Petroff & Assocs., 441 Lexington Ave., New York, N. Y., archts.

▲ **Leader Development Corp.**, 140 Chancellor Ave., Newark, N. J., Own Forces, $1,000,000, 75 HOUSES, Rte. 69, WASHINGTON, N. J.

United Constr. Co., 1204 Lincoln Ave., Pittsburgh 6, Pa. LB $705,000 (11 bidders) general constr. Secondary SCHOOL for California Community Jt. School Bd., CALIFORNIA, PA. Pa. P. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids Aug. 7. CD 7/8.

Uniontown Constr., 144 E. Main St., Uniontown, Pa. CA $627,000. addns., alterations to SECONDARY SCHOOL for Dunbar Twp. School Dist. Leisnring, DUNBAR, PA. Pa. P. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids July 10. CD 7/16, under LB.

Savastio Constr. Co., Box 205, Hershey, Pa. LB $613,115 general constr. MENS DORMITORY and utility expansion at Kutztown State Teachers' College, KUTZTOWN, PA. General State Auth., 18th and Herr Sts., Harrisburg, Pa. Bids Aug. 6. CD 7/14.

Panna Constr. Co., 614 White Horse Pike, Somerdale, N. J. CA $779,000. general constr. JUNIOR HIGH SCHOOL for Darby Twp. School Dist., SHARON HILL, PA. Pa. P. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids July 15. CD 7/18, under LB.

▲ **Joseph F. Hughes & Co.**, 5 E. Franklin St., Baltimore 2, Md., CA $3,102,237, two 3 story cell blocks and enclosing walls, Baltimore City JAIL, BALTIMORE, MD. City Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md. Bids July 30. CD 8/1, under LB.

▲ **Mark Building Co.**, c/o S. Panitz, 1606 Reily Ave., Baltimore 9, Md., Owner Builds, $1,386,000. 134 brick HOMES, Codonia Ave., Waycross and Whitty Rds., BALTIMORE, MD.

John McShain, Inc., 1501 N. Arlington Ridge Rd., Arlington, Va., CA $775,500, constr. LEGATION BUILDING, 2900 Cathedral Ave. N. W., WASH., D. C. Swiss Legation, 2900, 3007 and 3215 Cathedral Ave. N. W., Wash., D. C. Bids July 29, awarded Aug. 5. CD 6/9.

SOUTH

HEAVY CONSTRUCTION—BA

S. C., **Rock Hill**—AIRPORT PAVING, etc.—BA 8/26—City, airport paving and lighting $100,000. Plans deposit $20. Airport Engineers Assocs., 2021½ Princess St., Wilmington, N. C., engrs.

▲† **Fla., Eglin Air Force Base**—AIRPORT IMPRVS.—BA On Or About 8/28—U. S. Eng., 2301 Grant St., Mobile, Ala., erosion control, ENG-01-076-59-11. CD 9/17/57.

(Continued on page 114)

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12,000 feet of Armco HEL-COR Pile Shells driven for foundation of new National Cash Register Company building

Clusters of Armco HEL-COR Pile Shells driven for National Cash Register Company building by Candler-Rusche, Inc., contractors of Detroit, Michigan.

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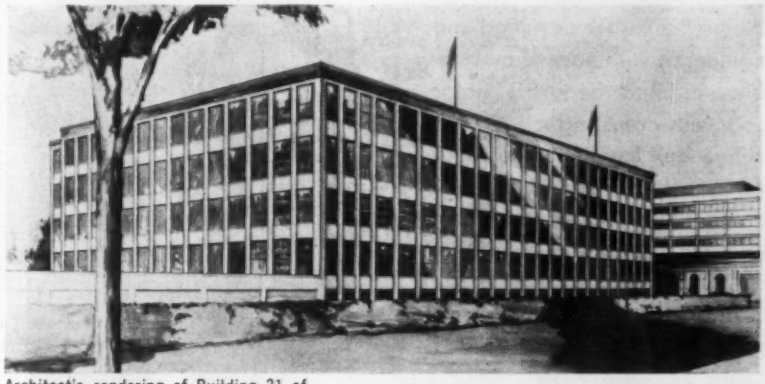

Architect's rendering of Building 31 of the National Cash Register Company.

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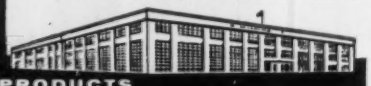

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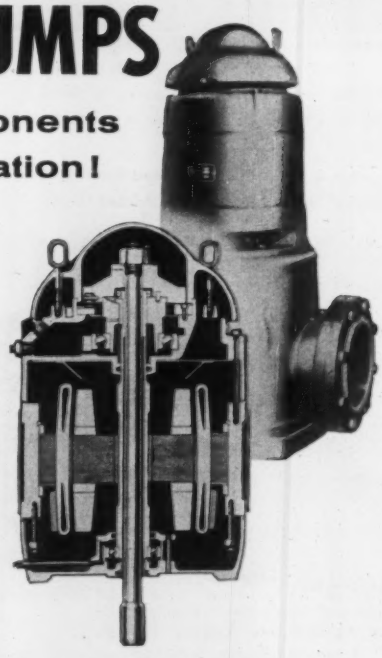

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(Continued from page 112)

† **N. C., Cherry Point**—SEAL-COATING RUNWAYS, etc.—BA 9/2—Dist. P. Wks. Office, Fifth Naval Dist., Rm. 307, Bldg. N-26, U. S. Naval Base, Norfolk, Va., bit. seal coating runways and taxiways, Marine Corps Air Station, NBy 15366, Spec. No. 15366-58. CD 9/17.

† **Ala., Eufaula**—SUPPORT FACILITIES—BA On Or About 9/3—U. S. Eng., 2301 Grant St., Mobile, constr. FPS-24 and 26 support facilities for AC&W Station, ENG-01-076-59-12.

† **Fla., Cocoa**—LANDSCAPING—BA About 9/3—U. S. Eng., Box 4970, Jacksonville, landscaping air force missile test center, Patrick Air Force Base, ENG-08-123-59-9. CD 4/23.

▲† **Alabama and Georgia**—BA 9/4—U.S. Eng., 2301 Grant St., Mobile, Ala. constr. approx. a mile long earth dam and will range range up to 66 ft. in height on Georgia Bank of the River which will extend from near present river bank to vicinity of Ga. State Hy. No. 39 on Walter F. George Lock and Dam, Chattahoochie River. CD 7/7.

† **Louisiana**—BA 9/4—U. S. Eng., foot of Prytania St., New Orleans, 195,000 cu. yd. embankment and 15 acres seed on Red River, Item R-68.6-R, Barbin Levee setback; Item R-67-1 R, Lombard Levee; Item R-65-6-R, Saline Levee, Avoyelles Parish, Inv. No. 59-32. CD 4/22/44, under Illinois-Louisiana.

† **Florida**—BA 9/16—U. S. Eng., P. O. Box 4970, Jacksonville, officers' swimming pool, Homestead Air Force Base, Homestead; McCoy Air Force Base; Pinecastle, ENG-08-123-59-10. CD 8/23/56, under Fla., Homestead.

† **Fla., Mayport**—SWIMMING POOL—BA 9/18—Dist. P. Wks. Office, 6th Naval Dist., Bldg. 13, U. S. Naval Base, Charleston, S. C., enlisted men's swimming pool facility. U. S. Naval Auxiliary Air Station, NBy-19898, Spec. No. 19898/58. CD 1/2.

BUILDINGS—BA

La., New Orleans—CHURCH, etc.—BA 8/28—Lakeview Presbyterian Church, 5914 Canal Blvd., 1 story, 16,000 sq. ft. brick, cast stone, granite church and 2 story veneer educational bldg. Plans deposit $50. Edward M. Y. Tsoi, 823 Julia St., archt.

▲ **Miss., Jackson**—SCHOOL—BA 9/4—Jackson Municipal Separate School Dist., 662 S. President, Jackson, 115,774 sq. ft. concrete, steel frame, brick, Negro Junior-Senior High School. $1,150,000. Jones & Haas, and Wm. R. Allen, Jr., Associating Archts, Plaza Bldg., archts. CD 8/2.

† **Fla., Tallahassee**—TRAINING CENTER—BA On Or About 9/16—U. S. Eng., 2301 Grant St., Mobile, Ala., constr. Army Reserve Training Center, ENG-01-076-59-10.

▲ **Va., Norfolk**—PUBLIC SAFETY—BA 9/17—City, City Hall, Public Safety bldg. $4,000,000. Extended date. Vincent G. Kling, 917 Corinthian Ave., Phila., Pa., Paul Woodward, Lewis A. Oliver, Herbert Smith, 333 W. Freemason St., archts. CD 6/11.

BUILDINGS—SLC

Ky., Louisville—WAREHOUSE, etc.—Orkin Exterminating Co., Inc., 525 S. 7th St., Zone 1, soon lets contract warehouse and office, 4412 Preston Hy. $95,000. Otis & Grimes, Tyler Bldg., Zone 2, archts.

HEAVY CONSTRUCTION—LB & CA

▲† **Doyle & Russell**, Central National Bank Bldg., Richmond, Va. LB **$1,457,744**, data reduction center LANGLEY FIELD, VA. National Advisory Committee for Aeronautics, Langley Field, Va. CD 8/24/56.

† **Eastern Maintenance Co.**, 924 Bidwell St., Pittsburgh 33, Pa., **$488,300**, fish cultural station, Inv. No. SFW-75, BOWDEN SPRINGS, W. VA., U. S. Fish & Wildlife Service, Room 1105, 59 Temple Place, Boston 11, Mass. Bids June 20. CD 5/26.

Mountain State Constr. Co., Box 296, Spring Hill, W. Va., CA **$527,400**, interceptor sewer, 20 St. to Guyandotte River, Section II, Contr. 8, HUNTINGTON, W. VA., Huntington Sanitary Bd., Robert M. Levy, gen. counsel, City Hall, Huntington, W. Va. Bids June 27, awarded Aug. 4. CD 6/6;
The Schurman Co., 75 3 Ave. W., Huntington, W. Va., CA **$131,209**, Section III (Huntington, W. Va.).

▲ **NORTH CAROLINA**—State Hy. Comn., Raleigh, N. C.—**Clinchfield Concrete Co., Inc.**, Market and Wexler Sts., Kingsport, Tenn. CA **$1,477,065**, est. $500,000, CABC, concrete pavement and shoulder constr. 8.14 mi. US 64 and 70 from Catawba River, Northeast to Statesville By-Pass, Proj. 8.16440 I-40-2 (15) 140, Iredell Co.;
N. C.—**Barrus Constr. Co.**, Box 395, Kingston, N. C. CA **$675,900**, est. $500,000, CABC, S.A. base, bit. conc. surf. and culverts 7.09 mi. on US 17 between New Bern and the Jones Co. line, Proj. 8.82073, DF-196 (10) Craven Co. Bids July 30, awarded Aug. 6. CD 8/4, under LB.

NORTH CAROLINA—State Hy. Comm., Raleigh, rejected bids July 1, CABC b. conc. binder and surf. and structures 0.34 mi. U. S. 220 and 158 near Guilford-Rockingham Co. line, Proj. 8.85372, DF-625 (10) F-625 (11) Guilford Co. CD 7/11, under LB.

† **Stream Clearing Constr. Co.**, Wilmington, N. C. CA **$131,600**, snagging and clearing streams in Bladen, Duplin, Onslow, Pender and Sampson counties and in Town of Clinton, CIVENG-31-075-58-34, NORTH CAROLINA. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids July 16. CD 6/10.

City, City Hall, Lake City, S. C., rejected bids July 29 sanitary sewer imprvs., LAKE CITY, S. C. LB **$236,466**. CD 8/5, under LB.

Cecil's Inc., P. O. Box 1895, Spartanburg, S. C. CA $124,683. sanitary sewers, SPARTANBURG, S. C. City, City Hall, Spartanburg, S. C.

▲ **S. J. Curry & Co.**, Box 1436, Albany Ga., CA $1,323,674 sanitary sewerage sys. imprvs., ALBANY, GA., City, City Hall, Albany, Ga. Bids July 30. CD 8/5, under LB.

United Paving & Constr., 4250 Okechobe Rd., West Palm Beach, Fla. LB $74,743. road-salvage Area North, Patrick Air Force Base, ENG-08-123-59-1, COCOA, FLA. U. S. Eng., Box 4970, Jacksonville. Bids July 24. CD 7/1.

Chicago Bridge & Iron Wks., 57 Forsyth St. N.W., Atlanta, Ga., LB $440,400. elevated tanks, Proj. 3, HOLLYWOOD, FLA. City, City Hall, J. W. Watson, city mgr., Hollywood, Fla. CD 6/3;

Florida Utilities Constr. Corp., 2100 N. Dixie Hy., Wilton Manor, Fla., LB $164,183, water distr. expansion, Proj. 4 (Hollywood, Fla.).

Weekley Asphalt Paving Co., Hallandale, Fla. LB $184,689 street grading paving, HOLLYWOOD, FLA. City, City Hall, Hollywood, Fla. Bids Aug. 1. CD 3/16.

Alfred M. Rappaport, 10 S. Orange Ave., Sarasota, Fla. LB $414,480, terminal building, Sarasota-Bradenton Airport, SARASOTA, FLA. Sarasota-Manatee Airport Auth., M. V. Pilcher, mgr., Sarasota, Fla. CD 10/15/54.

▲ **Houston Contg. Co. & H. C. Price**, Box 1111, Bartlesville, Okla. CA Est. over $3,000,000. 600 mi. natural gas lines, 2 compressor stations in Coffee, Elmore, Lee and Hale Counties; Ala. and Bibb, Chatham, Polk, Fulton and DeKalb Counties, Ga. ALABAMA and GEORGIA. Southern Natural Gas Corp., 3 Ave. and 20th St. N., Birmingham, Ala.

▲ **Markwell & Hartz**, P. O. Box 6225, East Memphis Station, Memphis 1, Tenn. CA $1,732,714. sewage treatment plant, MERIDIAN, MISS. City, City Hall, Meridian, Miss. Bids July 31. Hamilton-Schultz-Luke, Roebuck Dr. and Box 1380, Meridian, Miss., engrs. CD 6/14/56.

LOUISIANA—State Dpt. Hys., Hy. Office Bldg., Baton Rouge,

T. L. James & Co., Inc., Ruston, La. LB $117,806 28,049 cu. yd. clam shell surf. course furnished, placed and spread 11.5 mi. Sabine Pass-Johnson Bayou Hy., Rte. LA 82, SP 384-01-03, Cameron Parish. Bids Aug. 6. CD 7/29.

Roland Constr. Co., Box 850, Alexandria, La., LB $101,993, (5 bidders), Proj. No. 1958-1: storm drainage imprvts., ALEXANDRIA, LA. Gravity Drainage Dist. 1, Alexandria, La. Bids Aug. 4. CD 7/21.

Lee-Emmert Cont. Eng., 7602 N. Central Expressway, Dallas, Tex. LB $807,000 (4 bidders), mechanical work, supporting towers, trusses and spouting included in addnl. grain facilities, Port Allen, BATON ROUGE, LA. Greater Baton Rouge Port Comn., 141 N. Jefferson, Port Allen, La. Bids Aug. 4. CD 7/18.

Sachse Electric Co., Inc., 5925 Greenwell Springs Rd., Baton Rouge, La. LB $164,778, (7 bidders), electrical power, lighting, sound powered telephone and temperature sensing installation for addnl. grain facilities, Port Allen, BATON ROUGE, LA. Greater Baton Rouge Port Comn., 141 N. Jefferson, Port Allen, La. Bids Aug. 4. CD 7/25.

† **Lehman Roberts Co., Inc.**, 1098 Wilson St., Memphis, Tenn. LB $117,963. repairs to Runways 14-32 18-36, 9-27 and 3-21 at Naval Air Station, NAy 19949, MEMPHIS, TENN. Dist. P. Wks. Office, 6th Naval Dist., Bldg. 13, U. S. Naval Base, Charleston, S. C. Bids Aug. 5. CD 7/15.

† **Hickman Bros., Inc.**, 3170 E. 11th St., Los Angeles 23, Calif. CA $184,700. constr. sprinkler sys. in gaseous diffusion plant, Bldg. K-502 and auxiliary bldgs. Pumphouse K-832 and Switchhouse K-731, Inv. No. 501-58-15A, OAK RIDGE, TENN. U. S. Atomic Energy Comn., P. O. Box E, ATTN: R. J. Dunbar area constr. Div., Oak Ridge, Tenn. Bids July 17. CD 6/27.

BUILDINGS—LB & CA

Bryan Gordon, 4613 Duke St., Alexandria, Va. LB $432,987 (7 bidders) constr. combination elementary and high SCHOOL known as Ressie Jeffries School, FRONT ROYAL, VA. Warren County Bd. Educ., Front Royal, Va. Bids Aug. 4. CD 7/14.

N. C. Jones Constr. Co., Myrtle Beach, S. C. CA $650,000. 2 story HOTEL, NORFOLK, VA. Irvin Silverman, Virginia Beach, Va. Edward K. Sheppard, 2220 Chatham Ave., Charlotte, N. C., archt.

W. Wesley Singletary & Son, Lake City, S. C. CA $372,375. Elm St. ELEMENTARY SCHOOL, NORTH CHARLESTON, S. C. School Dist. No. 4, North Charleston, S. C. (Correction-contractor's name). CD 7/28, under LB.

Congaree Constr. Co., 3530 Colony Forest Dr., Columbia, S. C. LB $854,000. BANK BLDG., COLUMBIA, S. C. South Carolina National Bank, 1401 Main St., Columbia, S. C. Bids July 29. CD 7/23.

Plaks Constr. Co., Inc., 3490 N. W. 71 St., Miami, Fla. LB $221,000 1 story, 100 x 212 CB-S. BAKERY, 3122 73 St., MIAMI, FLA. Food Fair, Inc., c/o general contractor.

▲ **Taylor Constr. Co.**, 2975 LeJuene Rd., Miami, Fla. CA $1,500,000, HOTEL addn., parking garage, public spaces ball room, convention room, 4441 Collins Ave., MIAMI BEACH, FLA. Fontainbleau Hotel Corp., 4441 Collins Ave., Miami Beach, Fla. CD 7/21.

Citation Constr. Co., 19040 Franjo Rd., Farrine, Fla., Owner Builds. $680,000, 98 one story, 27x51 ft., 37x55 ft., 40x47 ft. CB-S RESIDENCES, Gulfstream

Profit-Paying WAUKESHA POWER

FOR CRANES AND SHOVELS

WAUKESHA 135 DIESEL
Torque Converter Package—
4¼ x 5-in., 426 cu. in.

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WAUKESHA VLRDBSU
V-12 Turbo-Supercharged DIESEL
8½ x 8½-in., 5788 cu. in.

Complete size range to 1235 hp . . . all standard fuels.

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WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN

NEW YORK TULSA LOS ANGELES

and Holiday Rds., PERRINE, FLA. R. J. Schneider, 1431 Flamingo Way, Hialeah, Fla., archt.

▲ **The Austin Co.**, 16112 Euclid Ave., Cleveland, O. CA $2,000,000, RETAIL DEPT. STORE, ST. PETERSBURG, FLA. Montgomery Ward & Co., 619 W. Chicago Ave., Chicago, Ill.

Settecasi & Chillura, 2101 5th Ave., Tampa, Fla. CA $353,900, Egypt Lake ELEMENTARY SCHOOL, TAMPA, FLA. Hillsboro County Bd. P. Instruction, J. C. Farnell, supt., Courthouse, Tampa, Fla. CD 7/15.

▲† **Daniel Constr. Co.**, 822 7 Ave. S., Birmingham, Ala. CA $5,214,000. Base Bid, constr. 316 unit CAPEHART HOUSING, at Redstone Arsenal No. 2, HUNTSVILLE, ALA. U. S. Eng., 2301 Grant St., Huntsville, Ala. Bids June 5. CD 6/10, under LB.

▲ **Austin Bldg. Co.**, 1000 Singleton Blvd., Dallas, Tex. CA steel work, gallery work and erecting equipment, Arsenal Hill POWER PLANT Unit No. 5, SHREVEPORT, LA. Southwestern Gas & Electric Co., 428 Travis St., Shreveport, La. Bids Aug. 1, awarded Aug. 1. CD 2/5.

Foster Creighton Constr. Co., 724 1st American National Bank Bldg., Nashville, Tenn., CA $650,000. TELEPHONE EXCHANGE and OFFICE, southwest corner Harrodsburg Pike and Lane Allen Rd., LEXINGTON, KY. The General Telephone Co., 15 Walnut St., Lexington, Ky. Brock & Johnson, 159 Barr St., Lexington, Ky., archts. Staggs & Fisher, 508 E. Main St., Lexington, Ky., engrs. Bids July 29.

† **Williams Constr. Co., Inc.**, 6015 Chapman Hy., Knoxville, Tenn., CA $236,492 (5 bidders) parts A&B constr. ROLLING MILL NO. 3 BLDG. addn. to Bldg. 9215 and MAINTENANCE ANNEX to Bldg. 9215 Y-12 plant area. Inv. No. 401-58-16A. OAK RIDGE, TENN. U. S. Atomic Energy Comm., P. O. Box E, ATTN. R. J. Dunbar Area Constr. Div. Oak Ridge, Tenn. Bids July 22. CD 6/27.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

Wis., Hartford—SWIMMING POOL—BA 8/26—City, City Hall, swimming pool, $175,000. Plans deposit $10. Rueckert & Mielke, 420 Frederick St., Waukesha, engrs. CD 9/11.

▲ **Ill., Chicago**—BA 8/28—City Dpt. Purchase, City Hall, Zone 2, 4,300 ft. monolith concrete and 2,600 ft. rein.-con. pipe, auxiliary outlet sewer, Pratt Ave. System, $1,150,000; installing equipment, Fulton St. Pumping station, Northwest Superhighway; constr. drop junction joining main drains, $500,000. B. C. Eilers, 320 N. Clark St., Zone 10, engr. CD 6/10/57.

Ill., Chicago—BA 8/28—Metropolitan Sanitary Dist., 100 E. Erie, Zone 11, 6,490 ft. 42 in. concrete sewer; 320 ft. 42 in. pipe in tunnel; 1,970 ft. 24 in., 80 ft. vitr. 24 in. pipe tunnel Thornton Township, Markham. $500,000. Horace Ramey, 100 E. Erie, Zone 11, engr. CD 10/10/56.

Ill., Chicago—SWIMMING POOLS—BA 8/29—Chicago Park Dist., 425 E. 14 St., Zone 5, install two 67 ft. 3 in. x 164 ft. 2 in. and 53 ft. 6 in. x 67 ft. 3 in. pools, related facilities, Portage Park, $500,000. Robt. A. Black, 425 E. 14 St., Zone 5, engrs. CD 6/11/57.

Mich., St. Louis—POWER PLANT WIRING—BA 9/4—City, Donald P. Ziembke, mgr., power plant wiring, 1,700 kva engine generator set, furnishing, installing generator, oil circuit breakers, transformers, feeder oil circuit and panel, etc. Plans deposit $45. Pfeifer & Schultz, 701 Westley Temple Bldg., Minneapolis, Minn., archts.

Mich., Detroit—BA 10/15—Henry V. Herrick, county drain comr., Wayne Co., 3523 Cadillac Tower, Detroit, Zone 26, installing two motor driven storm water pumping units, tide water gates and electrical work for Wyandotte Pumping Station, Wayne County Drainage Dist. No. 5, Drain Ecorse Twp. and City of Wyandotte. Plans deposit $25; adv. ENR 8/21. CD 12/26/56.

BUILDINGS—BA

Wis., Glendale—SCHOOL—BA 8/27—Joint School Dist. No. 1, 4650 N. Port Washington St., Good Hope School. $524,700. Fritz von Grossmann, 5455 W. Burleigh St., Milwaukee, archt. CD 7/24.

Ill., Edwardsville—SCHOOL—BA 8/29—Edwardsville Community School Dist. 7, Bd. Educ., 2 story, 83,800 sq. ft. Junior High School, Bypass No. 66. $875,000. Edward A. Kane, 100½ N. Main St., archt. CD 12/27.

▲ **Ill., Granite City**—SCHOOLS—BA 9/2—Community School Dist. 9, Granite City School Bd. 3100 Madison St., 1 story, brick, steel, concrete, etc., Junior High School 2300 W. 25 St., $700,000; 1 story, brick concrete, elementary school, 3201 E. 23 St., $345,000; 1 story, brick, concrete, etc. elementary school bldg., 2400 Wilson Ave., $345,000; 1 story, brick, concrete, etc. elementary school bldg., 4651 Maryville Rd., $345,000. Joseph D. Standish, Spivey Bldg., East St. Louis, archt. CD 11/13.

▲ **Ill., Chicago**—APARTMENTS—BA 9/8—Hyland Builders Corp., 7728 Sheridan Rd., Zone 26, 32 four-unit apartments, $2,080,000. Roy M. Schoenbrod, 7728 Sheridan Rd., Zone 26, archt.

O., Parma—SCHOOL—BA 9/9—Parma Bd. Educ., 5401 W. 54 St., Cleveland, Zone 29, Forrest Elementary School. $500,000. Plans deposit $35. Mellemnbrook, Foley & Scott, 20 Beech St., Berea, archts. CD 6/5.

Wis., Madison—SCHOOL—BA 9/10—Bd. Educ., Madison, Jacobson School, $420,000. Plans deposit $50. Law, Law, Potter & Nystrom, 121 S. Pinckney St., archts. CD 5/23.

BUILDINGS—SLC

▲ **Wis., West Allis**—PLANT—Borden Co., 620 N. 8 St., Milwaukee, soon lets contract 1 story, 100,000 sq. ft. fluid milk and ice cream plant, $3,000,000. Cowell & Robinson, 25 W. 43 St., New York 36, N. Y., archts. CD 4/3.

HEAVY CONSTRUCTION—LB & CA

American Constr. Co., 4100 Brookpark Rd., Cleveland 29, O. LB $127,718, est. $190,285 (9 bidders) storm sewers, appurtenances in Woodway Creek from W. 48 St. to Theota Ave., PARMA, O. City of Parma, City Hall, 6611 Ridge Rd., Parma 29, O. Bids Aug. 4. CD 7/15.

▲ **INDIANA**—State Hy. Comn., John Peters, chn., State House Annex, Indianapolis, Bids opened 7/29,

Ind.—**Southwest Eng., Inc.**, 616 Chestnut St., Evansville, Ind., LB $164,627, est. $174,658, (9 bidders), Bridge Contr. 4442, Clarke Co.; LB $158,270, est. $174,435 (4 bidders), Bridge Contr. 4445, Clark Co.;

Ind.—**Olinger Constr. Co.**, Huntingburg, Ind., LB $199,752, est. $224,937, (4 bidders), Bridge Contr. 4475, Clark Co.; LB $176,384 est. $203,733, (6 bidders), Bridge Contr. 4476, Clark Co.;

Ind.—**McMahan Constr. Co.**, Rochester, Ind., LB $198,885, est. $205,112, (2 bidders), Bridge Contr. 4439, Fulton Co.;

Ind.—**Smith & Johnson, Inc.**, 1799 Kentucky Ave., Indianapolis, Ind., LB $164,669, est. $166,720, (2 bidders), Bridge Contr. 4440, Crawford and Harrison Counties;

Ind.—**Ruckman & Hansen, Inc.**, 3617 N. Clinton St., Fort Wayne, Ind., LB $133,072, est. $181,818, (4 bidders), Bridge Contr. 4500, Tippecanoe Co.;

Ind.—**Stumler-Gohman & W. B. Stewart**, Shelbyville, Ky., LB $148,202, est. $163,627, (10 bidders), Bridge Contr. 4477, Clark Co.;

Ind.—**J. L. Wilson**, Bloomfield, Ind., LB $119,392, est. $122,565, (8 bidders), Bridge Contr. 4478, Clark Co.;

Ind.—**Rieth-Riley Constr. Co., Inc.**, Goshen, Ind., LB $206,279, est. $235,885, (7 bidders), Bridge Contr. 4479, Jackson Co.;

Ind.—**J. C. O'Connor & Sons, Inc.**, 2104 Miner St., Fort Wayne, Ind., LB $137,826, est. $153,995, (3 bidders), Bridge Contr. 4483, Lake Co. CD 7/15.

INDIANA—State Hy. Dpt., John Peters, chn., State House Annex, Indianapolis,

McMahan Illinois Corp., Rochester, Ind., CA $582,240, bit. pavement with concrete base, Contr. R-4407, U-829(3), Tippecanoe Co. Bids May 27. CD 6/5, under LB.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,

rejected bids July 29, surf. treat 2.03 mi. FAS 1299 from Deselm west, Kankakee Co. LB $92,465; resurf., widen Ill. 3 and 146 from Jct. to Cape Girardeau Alexander and Union Counties, LB $640,013; widen, resurf. Ill. 3 between Wolf Lane and Ware, Union Co. LB $143,150; resurf. US 460 between Ill. 163 and Ill. 13. St. Clair Co., LB $353,994; surf. treat. 2.98 mi. FAS 731 from US 67 near Athensville, Greene Co., LB $223,242; surf. Main St. at Ill. 34 in Rosiclare. Hardin Co., LB $164,377; resurf. Quincy St. Ill. 107 in Griggsville, Pine Co., LB $123,611; widen, resurf. Ill. 80 between Hanover and Savanna Jo Daviess Co. LB $616,425. CD 8/1 under LB.

ILLINOIS—Dpt. P. Wks. & Bldgs. Div. Hys., Centennial Bldg., Springfield,

rejected bids July 29, 3 span girder bridge over South Fork Saline River near Carrier Mills, Saline Co. LB $233,095. CD 8/1, under LB.

H. H. Mass Constr. Co., Chicago St., Algonquin, Ill., CA $143,719 Lock-McHenry dam in Fox River, McHenry, ILLINOIS. Dpt. P. Wks. & Bldgs., Div. Waterways, 240 W. Monroe St., Springfield, Ill. CD 4/13/45;

Cephas Williams Co., 914 E. Main St., Streator, Ill., CA $124,625, dike, Streator (Illinois).

▲ **E. J. Albrecht Co.**, 2626 W. 26 St., Chicago, Ill. CA $1,488,972. NW Expressway, C & NW bridge over Expressway feeder, Proj. BUG I. 265 (48), CHICAGO, ILL., Cook Co., Chicago, Ill. CD 8/23;

Consolidated Constr. Co., 101 S. Wells St., Chicago, Ill., CA $1,226,898, NW Expressway bridge, W approach feeder over Chicago River, etc., Proj. BUG I-265 (47) (CHICAGO, ILL.)

▲ **John Doherty Constr. Co.**, 9824 Genoa, Chicago, Ill., LB $1,057,460. Beverly Calumet sewerage sys. about 2 mi. in length 94th to 95th on S. Morgan, 94th St. 88th to 94 on S. May; W. 92nd St., W. 100th St., 11 ft. 6 in. x 9 ft. 2⅜ in. 36- to 108-in concrete pipe CHICAGO, ILL. City of Chicago, Dpt. Purchases, Chicago, Ill. CD 7/30.

▲† **Thomas M. Madden Co.**, 4610 W. Van Buren St., Chicago, Ill., CA $1,278,000, channel imprvs., Acme Bend, Little Calumet River, CIVENG-11-032858-1, CHICAGO, ILL. U. S. Eng., 475 Merchandise Mart, Chicago, Ill. Bids June 17. CD 6/23, under LB.

Union Contg. & Engr. Co., 2035 W. 43rd, Chicago, Ill. LB $556,732, improve runways, taxiways Midway Airport, agg. bit. surf. course 72,000 tons, CHICAGO, ILL. City, City Hall, Dpt. Purchases, Chicago, Ill. Bids Aug. 4. CD 9/28/56.

Abbot Constr. Co., 5789 North Lincoln Av., Chicago, Ill. CA $131,741, repairs to Anchorage Housing, Naval Air Station. Spec. 14733/58, GLENVIEW, ILL., Dist. P. Wks. Officer, Ninth Naval Distr. Bldg. 1-A, Great Lakes, Ill. CA 6/5.

LaSalle Constr. Co., 343 S. Dearborn St. and **John Doherty Co.**, 9824 W. Genoa St., Chicago, Ill. CA $231,694, water reservoir, pumping station, 130th and Halsted Sts., RIVERDALE, ILL. Village, Riverdale, Ill. CD 6/9.

Sankey Bros., Inc., Illinois Bldg., Springfield, Ill. LB est. $85,000. b. conc. pavement, storm sewers, SPRINGFIELD, ILL. City, City Hall, Springfield, Ill.

Geo. Hardin Constr. Co., 637 DesPlaines, Forest Park, Ill., CA $598,223, sanitary sewers, Sec. 1, N. of 111th St., WORTH, ILL. Village of Worth, Village Hall, Worth, Ill. CD 5/13.

▲ **MICHIGAN**—State Hy. Comn., Stevens T. Mason Bldg., Lansing,

Mich.—**L. A. Davidson Co.**, 213 E. St. Joseph St., Lansing, Mich. CA $1,885,326. double dual c. conc. 4.51 mi. interchange ramps and 3 bridges relocation US 12, BI 38102 C1-RN (102-3 20BI BL of 38-11-4 C1-RN BI B2 of 38-11-4 C1-RN B 3 of 38-114 (C1 I-02-3 20) 38102, Jackson Co.;

Mich.—**Cross & White**, 349 3-Mile Rd., Grand Rapids, Mich. CA $769,666. dual 24 ft. c. conc. 0.776 mi. ramps and approaches, one grade separation structure US 31 from 1,374 ft. south of intersection US 31 and US 21 north of County Rd. 452, BF 70021 C2-RN (F 155 30) BF B3 of 70-7-3 C1-R1 (F 155 30), Ottawa Co. Bids July 23. CD 7/30, under LB.

† **U. S. Eng.**, 1217 U. S. Post Office & Custom House, St. Paul 1, Minn., rejected bids June 20, dredging harbor of refuge on south shore of Lake Superior near village of Eagle Harbor, CIVENG-21-018-58-44, MICHIGAN. LB $55,969. CD 6/25, under LB.

G. Toccalino & Sons, 12811 Farmington Rd., Livonia, Mich. LB $77,736. Contr. PW-3447F, c. conc. south half of Kingsville St., DETROIT, MICH. City, Comr. P. Wks., Detroit, Mich. Bids July 22. CD 3/30/43.

G. Toccalino & Sons, 12811 Farmington Rd., Livonia, Mich. CA $89,452. 12,600 ft. 8-6-8 in. pavements on Kingville St., 6,800 ft. 12 in. storm sewers, HARPER WOODS, MICH. City, Robert J. McNutt, city mgr., Harper Woods, Mich. Bids July 22.

N. Sharrow, 361½ S. Water St., Marine City, Mich., LB $483,333. Section C, sewers, WARREN, MICH. City, 22720 Van Dyke St., Warren, Mich., Bids July 14;

Gianetti Bros., 9040 Holcomb St., Detroit, Mich., LB $126,555. Section A, sewers (Warren, Mich.);

D'Agostini Co., 5443 McClellan St., Detroit, Mich., LB $236,620. Section B, sewers (Warren, Mich.).

BUILDINGS—LB & CA

Frank Strumbly & Sons Co., 5719 Highland Rd., Cleveland, 24, O. Own Forces. $700,000, 23 HOMES, Strumbly Dr., HIGHLAND HEIGHTS, O.

Robert T. Schwachenwald, Rte. 140, Brunswick 2, O. Own Forces. $575,000, 25 Scholz HOMES, HINCKLEY, O. Scholz Homes, Inc., 2001 N. Westwood St., Toledo, O., archts.

▲ **Knowlton Constr. Co.**, 1133 W. Columbus St., Bellefontaine, O. CA. HIGH SCHOOL, SPRINGFIELD, O. Springfield Bd. Educ., Springfield School Dist., 40 College Ave., Springfield, O. Total est. $2,171,507. Bids July 29. CD 6/23;

Jamison Plumbing & Heating Co., plumbing and heating for school (Springfield, O.);

Acme Electric Co., electrical work for school (Springfield, O.).

▲ **Sollitt Constr. Co.**, 301 Columbia St., South Bend 24, Ind. CA Est. $1,000,000. 1 story, 51,800 concrete block PRINTING PLANT with tectum roof deck, WARSAW, IND. R. R. Donnelley & Sons, 350 E. Cermak St., Chicago, Ill. Bids July 21. CD 7/22.

Ragnar Benson, 4744 W. Rice, Chicago, Ill. CA $500,000. 2 story, 60x182 ft. STORAGE TERMINAL, 9500 Southview, BROOKFIELD, ILL. Great Western Sugar Co., 1530 16th, Denver, Colo. C. E. Hirsch, 1530 16th St., Denver, Colo., engr.

▲ **Dahl Stedman Co.**, 7 S. Dearborn, Chicago 3, Ill. CA $1,000,000. 5 story, 48x120 ft. brick, granite, structural steel BANK, CHICAGO, ILL. First Federal Saving & Loan Assoc., 7 S. Dearborn, Chicago 3, Ill. Ralph Milman, 7 S. Dearborn, Chicago, Ill., archt.

▲ **Sumner Sollitt Co.**, 307 N. Michigan Ave., Chicago, Ill., CA $2,000,000. 10 story, brick HEADQUARTERS BLDG., 233 North Michigan Ave., CHICAGO, ILL. National Cash Register Co., 323 N. Michigan Ave., Chicago, Ill. CD 6/3/57.

▲ **Sleepy Hollow Builders, Inc.**, Rte. 2, Box 94, Dundee, Ill. CA $18,000,000. 550 HOMES, Rte. 72, W. of Dundee, DUNDEE, ILL. Floyd Falase, Rte. 2, Box 97, Dundee, Ill. Andy Kuby, 1054½ Van Buren St., Woodstock, Ill., archt.

Joseph Handler Co., 6227 Central Park, Chicago, Ill., CA $500,000, 5 town HOUSES, Ridge and Howard Sts., EVANSTON, ILL. Rush Realty & Management Co., 2339 W. Howard St., Chicago, Ill.

▲ **Shepherd Constr. Co.**, 1015 Plainfield Rd., Joliet, Ill. CA $3,000,000. SHOPPING CENTER, paving U. S. Hy. 30, Theodore Rd. and Larkin Rd., JOLIET, ILL. Hillcrest Center, Inc., 163 N. Joliet St., Joliet, Ill. Scott Bigelow, 1015 Plainfield Rd., Joliet, Ill., archt.

L. G. Arnold, Inc., 201½ N. Dewey St., Eau Claire, Wis. LB $515,000. POWER PLANT addn., Unit No. 5, Alma, WISCONSIN, Dairyland Power Coop., 2615 East Ave. S., La Crosse, Wis. Bids July 26, Vern E. Alden Co., 33 N. La Salle St., Chicago, Ill., engr. CD 5/1/57.

H. P. Droner & Sons, Inc., P.O. Box 3111, St. Paul, Minn. CA $480,000. (10 bidders), general contract HIGH SCHOOL, CUMBERLAND, WIS. Bd. Educ., Cumberland, Wis. Bids Aug. 5. CD 7/23.

T. S. Willis, 20 E. Milwaukee St., Janesville, Wis. CA Est. $450,000. 1 story, 200x360 ft. FACTORY, DELAVAN, WIS., Sta-Rite Products Co., Delavan,

Wis., Grassold-Johnson & Assocs., 734 N. Jefferson St., Milwaukee 2, Wis., archts. CD 5/9/57.

Odders & Co., 3472 N. Elmwood Dr., Racine, Wis. CA 100x150 FACTORY-OFFICE BLDG., RACINE, WIS., Wisconsin Products, 519 Center St., Racine, Wis. CD 2/4/57.

Reniger Constr. Co., 179 N. Cedar St., Lansing, Mich. LB **$440,386**. general contract, OFFICE BLDG., EAST LANSING, MICH. State Bd. Agriculture, Mich. State University, East Lansing, Mich Bids July 23. CD 7/17.

De Young & Bagin, 1904 Chicago Dr. S.W., Grand Rapids Mich. CA **$448,000**. general construction CHURCH, GRAND RAPIDS, MICH. St. Francis Xavier Roman Catholic Church, 250 Brown St. S.E., Grand Rapids, Mich. CD 11/11.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Tex., Amarillo**—PERIMETER FENCE—BA 8/21——U. S. Eng., P. O. Box 61, Tulsa, Okla. perimeter fence Amarillo Air Force Base, ENG-34-066-59-2. $100,000.

† **Wyoming**—BA 8/26—Bureau Reclamation, Dpt. Interior, Rock Springs, channel erosion control for Eden canal and Pacific Creek, Eden Proj., Spec. 400C-115. CD 9/16.

† **N. M., Clovis**—CONTROL TOWER—BA About 9/3—U. S. Eng., Box 1538, Albuquerque, removing approx. 380 sq. ft. existing quarry tile on roof of existing control tower and replacing with new quarry tile, Cannon Air Force Base, ENG-29-005-59-16. CD 8/27/56.

† **Wyoming**—BA 9/4—Bureau Reclamation, Dpt. Interior, Thermopolis, clearing 52 acres Anchor reservoir area, Owl Creek Unit, Missouri River Basin Proj., Spec. 600C-183. CD 9/16.

† **Minnesota**—BA About 9/9—U. S. Eng., 1217 U. S. Post Office & Custom House, St. Paul, Zone 1, intermediate pool dredging, Mississippi River, between Lower Lock and Dam, St. Anthony Falls Project and Great Northern Stone Arch Bridge, Minneapolis, CIVENG 21-018-59-13. CD 9/9.

Tex., San Antonio—BA 9/23—City, concrete drainage channel Culebra Rd. to Quill into Woodlawn Heights. $614,000. CD 8/1.

BUILDINGS—BA

▲ **Minn., Minneapolis**—HOUSING—BA 9/4—Minneapolis Housing & Redevelopment Auth., Metropolitan Bldg., Glenwood Homes, 66 two story, 278 dwelling units and one community bldg. between Bryant and Emerson Aves. North from Olson Hy. to Glenwood Ave. $4,000,000. Armstrong & Schlichting; 2722 Park Ave., archts. CD 10/15/56.

▲ **Neb., Omaha**—SCHOOL—BA 9/9—School Bd., 39th and Davenport, South High School. $1,700,000. John Latenser & Sons, 1307 Farnam, archts. CD 3/11/57.

Wyo., Laramie—ENGINEERING—BA 9/16—University of Wyoming, 15 and Lewis, 3 and 4 story, 65 x 195 ft. and 54 x 65 ft. engineering bldg. addn. $600,000. Hitchcock & Hitchcock, 107 S. 5 St., archts. CD 1/15.

BUILDINGS—SLC

▲ **Tex., Dallas**—DORMITORY, etc.—Southern Methodist University, Campus, Dallas, soon lets contract, men's dormitory (300 cap.) $1,250,000; women's dormitory (240 cap.) $1,000,000; 56 unit apartment $550,000. CD 6/6.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 246 University Ave., St. Paul, Bids opened 8/8,

Minn.—Sellin Brothers, Hawley, Minn., LB **$232,734** (14 bidders) grading, grav. wearing course 10.7 mi. near Brainerd, Crow Wing Co.;

Minn.—H. Ganley, Inc., 2336 Hampden Ave., St. Paul, Minn. LB **$168,047** (8 bidders) grav. base plant mix bit. surf. 10.7 mi. near Kiester, Faribault Co.;

Minn.—Komatz Constr. Co., Box 248, Peter, Minn. LB **$102,336** (8 bidders) sand-grav. sub-base, plant mix surf. 0.8 mi. in Zumbrota, Goodhue Co.;

Minn.—Megarry Brothers, 437 33 Ave. N, St. Cloud, Minn. LB **$523,005** (10 bidders) sand-grav. sub-base, grav. base, road-mix bit. base 3.5 mi. near Eveleth, St. Louis Co.;

Minn.—R. Maturi Corp., Box 587, Chisholm, Minn. LB **$360,732** (12 bidders) sand-grav. sub-base, grav. base, road-mix bit. base 5.7 mi. near Floodwood, St. Louis Co. CD 7/24.

▲ **Kraus-Anderson, Inc.**, 501 South Eighth St., Minneapolis, Minn., CA **$1,573,987**, general contract, hangar bldg. for Northwest Airlines Main Base at Wold-Chamberlain Field, MINNEAPOLIS, MINN. Minneapolis-St. Paul Metropolitan Airports Comm., 2429 University Ave., St. Paul, Minn. Bids July 29. CD 8/1; under LB;

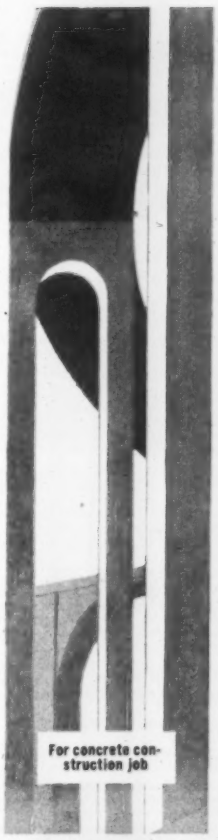
R. L. Anderson-Cherne, Inc., 529 Cleveland Ave., North, St. Paul, Minn. CA **$554,737**, plumbing, heating, piping sys. and temporary control for hangar bldg. for Northwest Airlines Main Base at Wold-Chamberlain Field (Minneapolis, Minn.).

† **Squire Electric Co.**, 1813 Grand, Kansas City, Mo., LB **$276,068** (9 bidders), lighting, wiring, etc. U.S. Post Office and Custom House, ST. PAUL, MINN. General Services Admin., P. Bldg. Service, 2306 E. Bannister Rd., Kansas City 10, Mo. Bids July 28.

Acton Constr. Co., 1871 West County Rd., St. Paul, Minn. CA **$760,747** sewage treatment plant, WILLMAR, MINN. City, E. H. Brogren, clk., Willmar, Minn. Bids May 27. CD 6/6, under LB.

▲ **MISSOURI**—State Hy. Dpt., Jefferson City,

Mo.—St. Louis County Bridge & Grading Co., 7929 Alabama Ave., St. Louis 11, Mo., CA **$740,242**,



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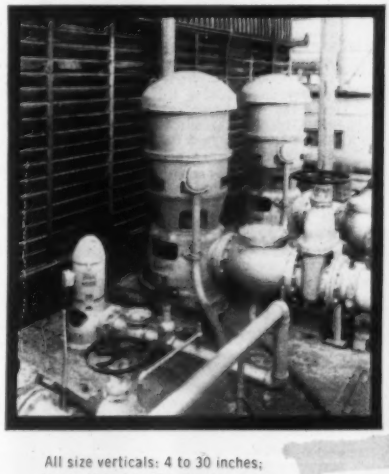

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Co. E	93,621	.7406	112,719
Co. F	92,967	.7520	112,966

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graded earth and 2-24 ft. c. conc. pavement 0.878 mi., St. Louis Co.;

Mo.—**Howard Constr. Co.,** 1504 North Osage, Sedalia, Mo., CA $1,388,445, graded earth 8.52 mi. Buchanan Co. Bids May 23. CD 6/5, under LB.

▲ **MISSOURI**—State Hy. Dpt., Jefferson City, Bids opened 7/31,

Mo.—**R. G. Aldridge,** 1610 Nebraska Ave., Kansas City Kan., LB $1,215,643 (11 bidders), graded earth 6.155 mi.; LB $129,929 (9 bidders), graded earth 0.568 mi.; LB $1,283,384 (9 bidders), graded earth 7.091 mi., all in Cooper Co.;

Mo.—**Reno Constr. Co.,** P. O. Box 61, Overland Park, Kan., LB $287,030 (4 bidders), wid'n., b. conc. surf. 11.022 mi., Daviess Co.; LB $300,985 (4 bidders), wid'n., b. conc. surf. 8.634 mi., Harrison Co.;

Mo.—**Union Constr. Co.,** 1401 Fairfax Trafficway, Kansas City, Kan., LB $137,118 (4 bidders), wid'n., b. conc. surf. 3.823 mi.; LB $224,090 (4 bidders), wid'n., b. conc. surf. 5.756 mi. both in Pettis Co.;

Mo.—**McLean Constr. Co.,** 1846 E. Sunshine, Springfield, Mo., LB $466,395 (3 bidders), graded earth and 35 ft. concrete pavement 0.716 mi.; LB $100,960 (3 bidders), graded earth, concrete pavement 0.329 mi., both in Greene Co.;

Mo.—**Masters-Jackson Paving Co.,** 1850 E. Sunshine St., Springfield 4, Mo., LB $202,376 (5 bidders), b. conc. surf. 10.186 mi., Laclede Co.;

Mo.—**Harris Crushed Rock Co.,** P. O. Box 512, Independence, Mo., LB $137,047 (5 bidders), wid'n., b. conc. surf. 3.259 mi. Jackson Co.;

Mo.—**Granite Bituminous Paving Co.,** 3943 Duncan Ave., St. Louis 10, Mo., LB $351,257 (5 bidders), wid'n., b. conc. surf. 7.493 mi., Cape Girardeau Co.;

Mo.—**H. D. Youngman Contr. Inc.,** P. O. Box 111, Baxter Springs, Kan., LB $114,730 (4 bidders), wid'n., b. conc. surf. 3.461 mi. Newton Co.;

Mo.—**Orco Contg. Co.,** 310 S. Filmore, P. O. Box 3775, Kirkwood 22, Mo., LB $102,404 (14 bidders), graded earth, surf. 10.008 mi. Moniteau Co.;

Mo.—**Carte Bros. Constr. Co. Inc.,** P. O. Box 512, West Plains, Mo., LB $76,561 (3 bidders), gran. surf. 4.74 mi. Ozark Co.;

Mo.—**Clarkson Constr. Co.,** 4133 Gardner Ave., Kansas City 20, Mo., LB $131,423 (11 bidders), graded earth 0.568 mi. Cooper Co.;

Mo.—**Midwest Precote Co.,** 7600 E. 17th St., Kansas City, Mo., LB $297,721 (7 bidders), wid'n., b. conc. surf. 6.21 mi. Ray Co. CD 7/15.

MISSOURI—State Hy. Dpt., Jefferson City, Bids opened 7/31,

Mo.—**S. J. Groves & Sons Constr. Co.,** 500 Wesley Temple Bldg., Minneapolis 3, Minn., LB $187,795 (11 bidders), 1-81 ft., 2-92 ft., 1-61 ft. plate girder spans, Sta. 740 plus 52; LB $111,113 (9 bidders), twin 2-47 ft., 1-56 ft. I-beam spans, Sta. 1408 plus 63, both in Cooper Co.;

Mo.—**W. J. Menefee Constr. Co.,** 2500 West 16th St., P. O. Box 30, Sedalia, Mo., LB $81,566 (11 bidders), 2-58 ft., 2-72 ft. I-beam spans, Sta. 813 plus 27, Cooper Co.;

Mo.—**Atkinson-Windle Co.,** 10 Hickory St., Chillicothe, Mo., LB $109,963 (3 bidders), 93 ft., 175 ft. continuous and 152 ft., 76 ft., 228 ft. counter walls, Sta. 141 plus 27, Greene Co.;

Mo.—**McLean Constr. Co.,** 1846 E. Sunshine, Springfield, Mo., LB $207,509 (3 bidders), 2-60 ft., 2-72 ft., 1-43 ft. and 1-52 ft. I-beam spans, Sta. 141 plus 27. Greene Co. CD 7/15.

▲ **P. S. Lord Mechanical Contractors,** 4507 S.E. Milwaukee Ave., Portland 2, Ore. CA $1,547,742, powerhouse, switchyard, Units 4 and 5, Garrison Dam and Reservoir, ENG-32-015-58-30, NORTH DAKOTA. U. S. Eng., Riverdale, N. D. CD 6/4.

▲† **Peter Kiewit & Sons,** Box 917, Sheridan, Wyo. LB $3,250,764, est. $2,912,357. (7 bidders), constr. alert facilities, Minot Air Force Base, ENG-25-066-59-8, MINOT, N. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 5.

▲ **KANSAS**—State Hy. Comn., State Office Bldg., Topeka, Bids opened 8/1,

Kan.—**Harry Henery, Inc.,** Box 15, Ottawa, Kan. LB $343,517. (10 bidders), grading 6.634 mi., Proj. 75-43 DF 063-4 (13), Jackson Co.;

Kan.—**Stannard Constr. Co., Inc.,** 519 South Broadway, Wichita 2, Kan. LB $930,853. (6 bidders) concrete pavement 9.057 mi., Proj. No. 36058-DF 092-4 (12), Marshall Co.;

Kan.—**Kaw Paving Co., Inc.,** Box 329, Topeka, Kan. LB $91,817. (3 bidders), b. conc. 3.597 mi., Proj. No. 4-89 K 1041 (3), Shawnee Co. CD 7/22.

Cushing Constr. Co., Woodbine, Iowa, CA $410,111, 456.88 mi. telephone lines in Jewell Co., Kan. Proj. Kan. 512-D American; 441 mi. open wire, 6.11 mi. rural dist. lines and 9.77 mi. cable, Franklin and Webster Counties, Neb., KANSAS-NEBRASKA. American Communications Co., Inc., Belleville, Kan. Bids July 31. CD 7/10.

TEXAS—State Hy. Comn., Austin,
cancelled bids to have been opened Aug. 19, grade, structures, etc. 5.477 mi. Hy. FM 1372. Proj. 1401-1-5 & R 1723-2-1, Madison Co.; grade, etc. 1.577 mi. Hy. SH 183, Proj. C 94-1-11. Tarrant Co. CD 7/29.

TEXAS—State Hy. Comn., Austin,
cancelled bids to have been opened Aug. 20, grade, etc. 2.291 mi. Hy. US 377, Erath Co. Proj. F 164 (12). CD 7/30.

City, City Hall, Houston, Tex. Purchase and Hire. $90,000, some misc. replacement of sanitary sewer lines, $100,000; some general storm sewers repairing, HOUSTON, TEX. CD 1/29.

Lacon Constr. Co., P. O. Box 13021, Dallas, Tex. CA $133,177. flood water retarding structures with earth-fill embankments, Site 2, Sulphur Creek, Inv. No. 3, LAMPASAS, TEX. Lampasas Co. WC&ID Dist. No. 1, Lampasas, Tex. Bids June 27. CD 5/8/56.

Mitchell Darby Constr. Co., Box 169, McAllen, Tex. LB $386,250. 42 in. siphon from sewage treatment plant to Loop 13, SAN ANTONIO, TEX. City, City Hall, San Antonio, Tex. Bids July 29. CD 7/16.

Graham Constr. Co., P. O. Box 141, Cameron, Tex. CA $268,300. Contr. 15, sewage treatment plant, TEMPLE, TEX. City, City Hall, Temple, Tex. CD 7/31, under LB;

Elmfork Constr. Co., P. O. Box 13186, Dallas 20, Tex. CA $416,164. Contr. 14 (Temple, Tex.).

† **MONTANA**—Bureau P. Rds., Dpt. Commerce, Helena,

James Crick & Sons, E. 3801 Riverside, Spokane, Wash. CA $544,559. constr. 6.5 mi. Forest Hy., Clark Fork Hy. running SE from Noxon and completing relocation of hy. made necessary by Noxon Dam, Sanders Co. Bids July 29. CD 8/7, under LB.

▲ **R. H. Fulton Co.,** 2323 Erskine Rd., Lubbock, Tex., CA $5,000,000, 50 mi. 30 in. natural gas transmission line, looping existing Big Piney lateral from Sublett and Lincoln Counties, to Pacific northwest. WYOMING, Pacific Northwest Pipe Line Corp., 2351 N. 10 St. W., Salt Lake City, Utah. CD 8/4.

BUILDINGS—LB & CA

C. O. Field Co., 2942 Harriet Ave., Minneapolis, Minn., CA $770,000. HIGH SCHOOL addn., BURNSVILLE (P.O. Savage), MINN. Bd. Educ., Burnsville, Minn. Bids July 31. CD 8/6, under LB.

Fowler-Veranth Constr. Co., 303 South 1st Ave. East, Duluth, Minn. CA $450,000. general contract 1 story, bsmnt., 89x152 ft. CHURCH and SCHOOL, South 59th Ave. W. and Raleigh St., DULUTH, MINN. Church of the Good Shepherd, 109 S. 48 W. Duluth, Minn. E. J. Prondzinski, 110 West 26th St., Minneapolis, Minn., archt. Bids May 16.

Ryan Constr. Co., Hibbing, Minn., CA $850,000. 1 story, 60,000 sq. ft. OFFICE, 64 and France Ave. South, EDINA (P.O. MINNEAPOLIS) MINN. Ryan Constr. Co., Hibbing, Minn., C. P. Howard and J. H. Michael both Metropolitan Bldg., Minneapolis, Minn. CD 6/5, under LB.

▲ **Standard Constr. Co.,** 250 Builders Exchange Bldg., Minneapolis, Minn., CA $1,366,150 (8 bidders) general contract, Westwood JUNIOR HIGH SCHOOL, Texas Ave. and 22 St., ST. LOUIS PARK, MINN. Bd. Educ., St. Louis Park, Minn. Bids Aug. 7. CD 7/17;

A. Newman Heating & Plumbing Co., 1608 Como Ave., St. Paul, Minn., CA $363,240. mechanical contract for Westwood Junior High School (St. Louis Park, Minn.).

The Sanitary Co., 505 South Broadway, Rochester, Minn., CA $489,930, mechanical work, plumbing heating and refrigeration for HOSPITAL addn., CEDAR RAPIDS, IOWA, St. Luke's Methodist Hospital, Cedar Rapids, Iowa. Bids Aug. 6. CD 8/6.

Schell Constr. Co., 310 Jefferson St., Jefferson City, Mo., LB $434,900 (4 bidders) 4-level, 51x112 ft. brick, concrete block, rein.-con. OFFICE addn., alterations, JEFFERSON CITY, MO. State Div. Employment Security, 100 State Capitol Jefferson City, Mo. Bids Aug. 5. CD 7/23.

Behlen Mfg. Co., Columbus, Neb., CA Est. over $100,000, 100 x 185 ft. all steel horizontal 545,000 bu. GRAIN ELEVATOR, on Mississippi River front, LOUISIANA, MO. MFA Grain & Feed Div., Missouri Farmers Assoc., Columbia, Mo.

Behlen Mfg. Co., Columbus, Neb., CA Est. over $100,000, 73 x 141 ft. all steel horizontal 264,000 bu. GRAIN ELEVATOR, adjacent to MFA Soybean Plant, MEXICO, MO. MFA Grain & Food Div., Missouri Farmers Assoc., Columbia, Mo.

Geo. L. Cousins Contg. Co., 875 N. Skinker Blvd., St. Louis 5, Mo. CA Est. $345,000. 1 story, 76½x125 ft. and 30x60 ft. brick, steel, concrete, masonry blocks SUPERMARKET with parking facilities, 5870 Easton Ave., ST. LOUIS, MO. Allo Realty Co., 1312 Purdue Ave., University City 5, Mo. National Foods, Inc., 1105 Central Industrial Dr., St. Louis 10, Mo., lessee. Fred C. Sternberg, 7912 Bonhomme Ave., Clayton 24, Mo., archt.

Eldridge Constr. Co., 3206 Strong Ave., Kansas City, Kan., LB $395,700. 4 story HOSPITAL addn., LEAVENWORTH, KAN. Cushing Memorial Hospital, Leavenworth, Kan. Bids July 31. CD 7/22.

Corley Constr. Co., 4908 North Santa Fe St., Oklahoma City 5, Okla. CA Est. $800,000. FREIGHT TERMINAL, 4500 SE 15 St., OKLAHOMA CITY, OKLA. Transcon Truck Lines Corp., 210 S. Westen St., Oklahoma City, Okla. Awarded July 2. CD 5/13, under Okla., Midwest City.

H. A. Lott, Inc., Box 25005, Houston, Tex. CA $769,656, (Base Bid plus) DORMITORY and APARTMENT facilities, BEAUMONT, TEX. Lamar State College, Bd. Regents, Beaumont, Tex. Bids July 25. CD 8/6, under LB.

Carpenter Bros., 1335 Plowman, Dallas, Tex. CA Est. $750,000. PARK CAR AND SHOP BLDG., Main St. Paul and Commerce, DALLAS, TEX. St. Paul Bldg. Co., 2505 Turtle Creek Blvd., Dallas, Tex. CD 8/9.

Page & Alley Constr. Co., 2005 Canelo St., Dallas, Tex. Owner Builds. $356,500. 11 DWELLINGS, in Wynne Hills Subdivision, DALLAS, TEX. CD 8/8.

Jos. E. Morgan & Sons, Box 6029, Dallas, Tex. LB $716,848 PLANT addn., GARLAND, TEX. Temco Aircraft Corp., Garland, Tex. CD 8/12.

Gulf Constr. Co., 821 Chelsea St., Houston, Tex. CA $500,000. TRUCK CENTER (storage, shop, loading and unloading), 7½ acre site, HOUSTON, TEX. Hobbs Trailer, 4510 Washington, Houston, Tex. CD 8/7.

Manhattan Constr. Co. of Texas, 1811 Crawford St., Houston, Tex. CA $778,000. 3 story, 13,500 sq. ft. ADMINISTRATION and 55,000 sq. ft. WAREHOUSE, HOUSTON, TEX. Metal Goods Corp., 711 Milby, Houston, Tex. Bids July 9. CD 6/26.

Clarence Brown Constr. Co., Hodell & Co., Tower Pet. Bldg., Dallas, Tex. CA $362,170. 36 DWELLINGS in South Center Hills Addn., IRVING, TEX. Hodell & Co., Power Ret. Bldg., Dallas, Tex. CD 8/12.

Brazelton Constr. Co., 922 Navigation, Corpus Christi, Tex. CA $526,949. MUSIC, DRAMA and ARTS BLDG., POWERHOUSE and utilities extens., KINGSVILLE, TEX. Texas College of Arts & Industries, Kingsville, Tex. Bids Aug. 1. CD 7/7.

Beck Constr. Co., Box 4005, Midland, Tex., Own Forces. $357,975, 23 DWELLINGS; $349,600, 20 DWELLINGS, MIDLAND, TEX. CD 6/4.

▲ **Zeto Enterprises, Frank and V. J. Zeto,** Orange, Tex. Owner Builds. $350,000. 35 frame DWELLINGS; $402,500, 35 frame, brick trim DWELLINGS; $360,000, 30 DWELLINGS, in Roselawn Addn., ORANGE, TEX. Grand total $1,112,500. CD 7/24.

Jos. P. Landry, Jr., E. L. Saba & Assocs., Port Neches, Tex., Own Forces. $350,000. 28 DWELLINGS, PORT NECHES, TEX. CD 5/19.

Grinnan Housing Corp., 1305 Main St., Dallas, Tex., Own Forces, $367,190, 29 DWELLINGS; $373,000, 31 DWELLINGS, RICHARDSON, TEX. CD 6/16.

▲ **Hitz Constr Co.,** 2111 4th Ave. N., Billings, Mont. CA $1,038,946. general constr. 1 and 2 story, 103,000 sq. ft. poured concrete and solid masonry HIGH SCHOOL, BILLINGS, MONT. School Dist. No. 2, 2911 4th Ave. N., Billings, Mont. Bids July 29, awarded Aug. 5. CD 8/6, under LB.

McGechie Constr. Co., Inc., P.O. Box 775, Cortez, Colo. LB $425,697, est. $400,000, 1 story, 36 x 107 ft. STUDENT FAMILY APARTMENTS, will provide 13 four-unit apartments ALAMOSA, COLO. Adams State College, Alamosa, Colo. Bids July 31. CD 5/21.

▲ **Foundations, Inc.,** 520 W. 40th St., Boulder, Colo., Separate Contracts. $6,000,000, 400- 450 one story, 1,100-1,400 sq. ft. RESIDENCES, BOULDER, COLO., Copelan Designs, 10090 W. 27th St., Lakewood, Colo., archt.

F. J. Kirchhof Constr. Co., 700 Lawrence St., Denver, Colo. CA $750,000 2 story, 72,000 sq. ft. and 9,000 sq. ft. in bsmnt. SERVICE CENTER, DENVER, COLO. Pub. Serv. Co., Gas & Electric Bldg., Denver, Colo. Bids July 15, awarded Aug. 4. CD 3/10.

Olson Constr. Co., 840 S. Jason St., Denver, Colo., CA $223,588, est. $93,000, 1 story, 21,000 sq. ft. WAREHOUSE AND OFFICE BLDG., DENVER, COLO. Power Equipment Co., 3440 Brighton Blvd., Denver, Colo. Bids June 27, awarded Aug. 1. CD 6/20.

N. G. Petry Constr. Co., 1114 W. 7th Ave., Denver, Colo. CA $318,000, est. $93,000, 1 story and part 2 story, 31,000 sq. ft. WAREHOUSE AND OFFICE addn. to present bldg. DENVER, COLO. Kohler-McLister Paint Co., 1275 Osage St., Denver, Colo. Bids July 31, awarded Aug. 2. CD 7/17.

H. W. Houston Constr. Co., 210 South Victoria, Pueblo, Colo., CA Est. $750,000 1 story, 80,000 sq. ft. SHOPPING CENTER, PUEBLO, COLO. Pueblo Shopping Center, Inc., c/o T. H. Buell & Co., archts., 730 14 St., Denver, Colo. CD 7/16.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Washington**—BA 9/16—Bureau Reclamation, Dpt. Interior, Ephrata, constr. earthwork, concrete canal lining, and structures for Wahluke Branch Canal, Sta. 333 plus 20 to 537 plus 80, Columbia Basin Proj., DC-5086. Extended date. CD 8/1.

▲ **Calif., Long Beach**—MARINA—BA 9/17—City, City Hall, constr. Long Beach Marina, Contr. No. 3. $1,000,000.

BUILDINGS—BA

▲ **Calif., Sacramento**—BANK—BA 9/3—Bank of America National Trust & Savings Assn., 300 Montgomery St. (selected list of bidders) 3 story, bsmnt., main bank, I St. between 7th and 8th Sts. $2,300,000. Wurster, Bernardi & Emmons, 202 Green St., San Francisco, archts. CD 11/6.

▲ **Calif., Los Angeles**—SCHOOL—BA 9/5—Bd. Educ., 1425 S. San Pedro, constr. Sepulveda Junior High School, $2,332,000. Arthur Froelich, 383 S. Robertson, Beverly Hills, archt. CD 6/9.

HEAVY CONSTRUCTION—LB & CA

IDAHO—State Hy. Dpt., Boise. Bids opened 8/5,

Carl. E. Nelson Constr. Co., Logan, Idaho, LB $583,861, constr. roadway, drainage structures and plant mix bit. surf. 14.858 mi. State No. 28, Jefferson Co. CD 7/18.

WASHINGTON—State Hy. Comn., Olympia,

Scheumann & Johnson, Lloyd Bldg., Seattle 1, Wash., CA $964,291, 7 rein.-con. main piers for high-level bridge across Lake Washington ship canal on Seattle freeway route, King Co. Bids Aug. 5. Awarded Aug. 6. CD 8/8, under LB.

† **Thompson Constr. Co. & George W. Lewis,** Kennewick, Wash. LB $693,119. (9 bidders), constr. earthwork and structures for Potholes East canal enlargement, Sta. 172 plus 00 to 251 plus 00 and 510 plus 00 to 770 plus 00, Schedules 2 and 5, Columbia Basin Proj., DC-5068, WASHINGTON. Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Aug. 5. CD 6/19.

P & Z Constr. Co., 120 S. Maple Ave., South San Francisco, Calif., LB $86,900 (6 bidders) drainage and fill work at U. C. Radiation Lab., BERKELEY, CALIF. Regents of University of California, Cashiers Office, 103 Admin. Bldg., Berkeley, Calif.

▲ Chotiner & Gumbiner Inc., 5316 Venice Blvd., Los Angeles, Calif. CA $1,251,770 (12 bidders) constr. Complex 4, Phase No. 3 consisting of control tower and admin. bldg., LOS ANGELES, CALIF. City Dpt. Airports, City Hall, Los Angeles, Calif. Bids Aug. 5. CD 6/8/56.

▲ Hight Constr. Co., 4344 Eagle Rock Blvd., Los Angeles, Calif. CA $1,010,615. activity and service bldgs. at Bloomfield Park Artesia Sorenson Park, East Whittier, Live Oak Park, Temple City, Rivera Park, Rivera; Valley Park, Azusa Mountain View Park, El Monte, LOS ANGELES, CALIF. Bd. Supervs., Los Angeles Co., 501 Hall of Records, Los Angeles, Calif. Bids June 25. CD 6/30, under LB.

De Narde & Ganske, 557 London St., San Francisco, Calif. LB $108,739 (6 bidders) playground and field house at Buchanan and Linden Sts., SAN FRANCISCO, CALIF. City and San Francisco Co., Recreation & Park Comn., Fell and Stanyon Sts., San Francisco, Calif. CD 11/13/47.

Piazza Paving Co., Box 800, San Jose, Calif. LB $118,400 (2 bidders) site development at John Muir Junior High School, SAN JOSE, CALIF. San Jose Unif. School Dist., 408 Almaden Ave., San Jose, Calif. Clark, Stromquist, Potter & Eirlich, 3200 Hanover St., Palo Alto, Calif., archts. CD 2/25, under Public Bldgs.

BUILDINGS—LB & CA

▲ Claude T. Lindsay, Inc., 291 Linfield Dr., Menlo Park, Calif. CA Est. $2,000,000. 400 HOUSE SUBDIVISION, BRIGHAM CITY, UTAH. Frieldand Bros. Con. Co., c/o contractor.

Alfred Brown Co., 628 Dooly Bldg., Salt Lake City, Utah. CA $417,367, masonry-concrete CLINIC BLDG., SALT LAKE CITY, UTAH. Salt Lake Clinic, c/o Ashton Evans, & Brazier, archts., 24 SW Temple, Salt Lake City, Utah. Bids June 14.

O. E. Turnquist Constr. Co., 1305 Republican St., Seattle Wash., CA Est. $100,000, 2 story, 80x134 ft., rein.-conc. and masonry tire WAREHOUSE, SEATTLE, WASH., Interstate Tire Co., 620 9 Ave. S., Seattle, Wash., K. S. Ripley, 915 E. Pine St., Seattle, Wash., archt.

Selkirk Co., W. 722 16 St., Spokane, Wash., CA $907,383, (7 bidders), 1 story, 110,000 sq. ft. frame, masonry John Shaw JUNIOR HIGH SCHOOL, SPOKANE, WASH. School Dist. 81, W. 503 4 Ave., Spokane, Wash. Bids Aug. 4. CD 7/16.

Strom Constr. Co., 1727 Fawcett St., Tacoma, Wash., CA $637,460, STUDENT CENTER, TACOMA, WASH. College of Puget Sound, 1500 N. Warner St., Tacoma, Wash. Bids May 28. CD 6/4, under LB.

▲ Ross B. Hammond Co., 623 Southeast Division Place, Portland, Ore., CA $4,737,780 (6 bidders) SOUTHEAST HIGH SCHOOL, PORTLAND, ORE. Multnomah School Dist. No. 1, 620 N. E. Halsey St., Portland, Ore. Bids Aug. 6. CD 7/9.

San Juan Union High School, 3730 Walnut St., Carmichael, Calif. Rejected bids Aug. 5, Endina High SCHOOL addns. CARMICHAEL, CALIF. Est. $975,000. Will re-advertise. CD 7/21.

▲ G. M. Shumaker, 6505 Wilshire Blvd., Los Angeles, Calif. CA $3,000,000. 264,480 sq. ft. Orange Plaza SHOPPING CENTER addn., GARDEN GROVE, CALIF. Orange Plaza, Inc., 6505 Wilshire Blvd., Los Angeles, Calif. Jacobson-Coppedge-Huxley, 4619 Beverly Blvd., Los Angeles, Calif., archts.

Marjan Development, Inc., 9562 Ball Rd., Anaheim, Calif. CA $473,000. 33 frame, stucco DWELLINGS, Dalmatian Ave., Heshire St., Lowe Dr., Escalon Ave., LA MIRADA, CALIF. Hemlock Terrace, Inc., 9562 Ball Rd., Anaheim, Calif.

Packard Constr. Co., 2230 Corinth Ave., Los Angeles, Calif. LB $414,415 (13 bidders) Capitrano Ave. SCHOOL, 8011 Sausilito Ave., Canoga Park, LOS ANGELES, CALIF. Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Aug. 5. CD 3/20.

Emblem Homes, 8906 W. Olympic Blvd., Beverly Hills, Calif. CA $999,300. 113 frame, stucco DWELLINGS, Verne, Claretta, Hawaiian and Central Ave., NORWALK, CALIF. Orange Gardens, 8906 W. Olympic Blvd., Beverly Hills, Calif.

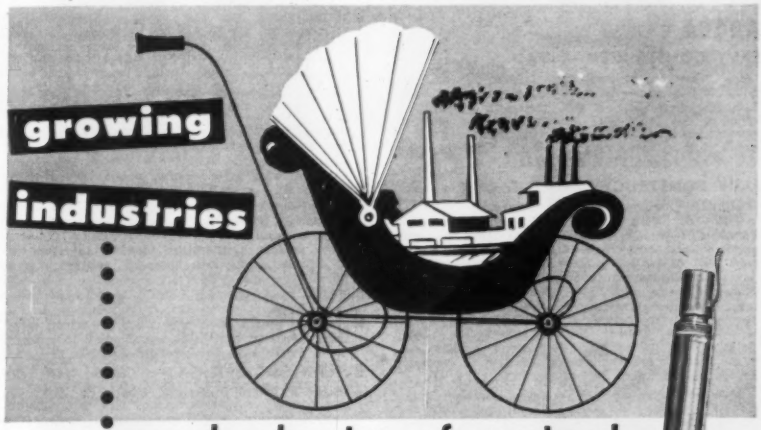
Geo. Alexander Constr. Co., 1280 N. Palm Canyon Dr., Palm Springs, Calif. Owner Builds. $466,000. 31 stucco DWELLINGS, Sunset Way and Orchid Tree Lane, PALM SPRINGS, CALIF.

▲ H. B. Nicholson, 880 E. Colorado St., Pasadena, Calif. LB $4,174,000 (2 bidders) constr. Pasadena HIGH SCHOOL, 2925 Sierra Madre Blvd., PASADENA, CALIF. Pasadena Bd. Educ., 351 S. Hudson St., Pasadena, Calif. Bids Aug. 5. CD 7/7.

▲ Del Webb Constr. Co., 5101 San Fernando Rd., Los Angeles, Calif. Owner Builds. $10,000,000. Grossmont Center DEPARTMENT STORE and SHOPS, SAN DIEGO, CALIF. Welton Becket & Assoc., 5657 Wilshire Blvd., Los Angeles, Calif., archts.

▲ Maino Constr. Co., 2238 S. Broad St., San Luis Obispo, Calif. LB $1,097,200 (3 bidders) general constr. men's PHYSICAL EDUCATION BLDG. and outdoor PHYSICAL EDUC. facilities, at California State Polytechnic College. W.O. 4205GC-25, SAN LUIS OBISPO, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Bids Aug. 6. CD 7/7.

Chasksfield Constr. Co., Inc., 15502 S. Crenshaw Blvd., Torrance, Calif. CA $514,500. 35 stucco DWELLINGS,



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Tract 24330, TORRANCE, CALIF. Alondra Gardens, Inc., 15502 S. Crenshaw Blvd., Torrance, Calif.

CANADA

HEAVY CONSTRUCTION—BA

▲ **Man., Fort Churchill**—HYDRANT REFUELLING INSTALLATION, etc.—BA 9/9—Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont., constr. hydrant refueling installation incl. various bldgs. and services, runway exten., taxiway and parking apron and aerodrome lighting facilities at Air Force Base. $4,500,000. Plans deposit $100. CD 10/22.

HEAVY CONSTRUCTION—LB & CA

▲ **ALBERTA**—Parliament Bldgs., Edmonton,
Alta.—**W. C. Wells Constr. Ltd.**, 10519-115 St., Edmonton, Alta. CA **$629,363** (2 bidders), c. conc. pavement and other work 6 mi. Trans-Canada Hy. from west of Calgary to west of Bowness;
Alta.—**Poole Engineering (1958), Ltd.**, 10503 109 St., Edmonton, Alta., CA **$166,636** (5 bidders) stab. grav. base course and asph. plant mix surf. 3 mi. Hy. No. 16 from Jasper Place to Winterburn;
Alta.—**McMahon Constr. & Development Co., Ltd.**, Calgary, Alta. CA **$452,227** (9 bidders), grading, etc. 3 mi. Hy. No. 2 from south of Dunvegan to Dunvegan Bridge. Grand total $1,248,226. CD 12/1/43.

▲ **Fulton-Bannister Co.**, 625 Northern Hardware Bldg., Edmonton, Alta. CA about 90 mi. crude oil line mainly 10¾ in. from Fort Assiniboine to Edmonton, ALBERTA. Total est. **$6,500,000.** Federated Pipe Lines Ltd., 304 6th Ave., W., Calgary, Alta. Awarded Aug. 4. CD 5/6.;
Mannix Co. Ltd., 737 8th Ave. S.W., Calgary, Alta. CA 40 mi. 10¾ in. crude line from Swan Hills oil field to Fort Assiniboine in this manner (Alberta).

▲ **BRITISH COLUMBIA**—B. C. Government, Parliament Bldgs., Victoria,
B. C.—**New West Constr. Co., Ltd.**, 10480-113th, Edmonton, Alta. CA **$1,472,340.** constr. Donald-Quartz Creek section Trans-Canada Hy. in Columbia Electoral Dist. Proj. No. 958;
B. C.—**Dawson, Wade & Co. Ltd.**, 775 Clark Dr., Vancouver, B. C. CA **$1,392,854.** constr. Rogers-Quartz Creek section Trans-Canada Hy. Proj. No. 961, Columbia Electoral Dist. F. T. Brown, Parliament Bldgs., Victoria, B. C., engr. Awarded July 30.

▲ **BRITISH COLUMBIA**—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids opened 7/31,
Emil Anderson Constr. Co. Ltd., 4th Ave., Hope, B. C. LB **$1,225,354.** grade, culverts, Mile 9.7 to Mile Mile 12.41 Trans-Canada Hy. Glacier National Park. CD 7/9.

Canadian Comstock Co., Ltd., 1415 Welch St., North Vancouver, B. C., LB **$683,000.** (8 bidders), installing of electrical services in Deas Island tunnel, near Ladner, Contr. No. 8, BRITISH COLUMBIA, B. C. Government, Parliament Bldgs., Victoria, B. C.

▲ **Evans Contg. Co. Ltd.**, 960 Sheppard Ave. E., Toronto, Ont., LB **$1,129,705** (5 bidders) 21 double staff dwellings, one single men's living quarters, related work at airport, GOOSE BAY, LABRADOR Dpt. Transport, Hunter Bldg., Ottawa, Ont.

▲ **C. A. Pitts, General Contractor Ltd.**, 30 Commercial Rd., Toronto, Ont. CA **$10,810,952.** buildings etc. airforce refueling base, Baffin Island, FROBISHER Bay, N. W. T. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids July 22. CD 7/30, under LB.;
Carter Constr. Co. Ltd., 419 Cherry St., Toronto, Ont. CA **$5,500,549.** addnl. development (Frobisher Bay, N. W. T.).

Shore & Horwitz Constr. Ltd., Box 527 Station "B", Ottawa, CA **$544,136,** constr. standard barrack block, Class 1, Royal Canadian Air Force Station, UPLANDS, ONT. Defense Construction (1951) Ltd., 56 Lyons St., Ottawa, Ont. Bids June 24, awarded July 31. CD 7/17.

QUEBEC—Provincial Rds. Dpt., Parliament Bldgs., Quebec City,
Michaud & Simard, Inc., 575 Arago St., West, Quebec, Que., CA Est. **$650,000.** gravelling 7 mi., City of Sully, Temiscouata Co. Awarded July 31.

BUILDINGS—LB & CA

▲ **Burns & Dutton Concrete & Constr. Co. Ltd.**, 9004 125th Ave., Edmonton, Alta. CA **$1,525,000.** 6 story HOSPITAL addn., University of Alberta Campus, EDMONTON, ALTA. Alberta Dpt. P. Wks., Parliament Bldgs., Edmonton, Alta. Bids July 3. CD 6/18;
Canadian Comstock Co. Ltd., 10363-108th St., Edmonton, Alta. CA **$952,816** (3 bidders) install plumbing and heating in clinical services addn. to University of Alberta (Edmonton, Alta.).

▲ **Burns & Dutton Concrete & Constr. Co., Ltd.**, 563 W. Broadway, Vancouver, B. C. LB **$1,318,800** (3 bidders) steel and concrete undergraduate wing CHEMISTRY BLDG. addn., University of B. C., VANCOUVER, B. C. University of B. C., Campus, Vancouver, B. C. Bids July 3. CD 6/12.

▲ **Hill Clark Francis Ltd.**, 4781 Ven Horne Ave. 1, Montreal, Que. LB **$1,100,000.** (2 bidders) 3 story, 140 ft. frontage with wings each 165 x 45 ft. structural steel frame, masonry walls, precast concrete roof U-shaped HEALTH PHYSICS AND BIOLOGY BLDG., CHALK RIVER, ONT. Atomic Energy of Canada Ltd., Chalk River, Ont. Dobush & Stewart, 4635 Sherbrooke St. W., Montreal, Que., archt.

Farquhar Constr. Ltd., 1275 Main St. W., North Bay, Ont. CA **$500,000.** PLANT expansion NORTH BAY, ONT. Dupont Co. of Canada Ltd., 1135 Beaver Hall Hill, Montreal, Que. Awarded Aug. 1. CD 7/15.

Sirotek Constr. Ltd., P. O. Box 820, City View, Ottawa, Ont., LB **$474,628.** (12 bidders), constr. MUNICIPAL GARAGE and alterations to existing bldgs., OTTAWA, ONT., City Dpt. Planning & Wks., City Hall, Ottawa, Ont.

R. E. Stewart Constr. Corp., 862 Wellington St. S., Sherbrooke, Que. CA approx. **$350,000.** (4 bidders) LIBRARY at College, LENNOXVILLE, QUE. Bd. Governors, Bishop's University, Lennoxville, Que. Bids July 29. Awarded July 30. CD 7/21.

▲ **Collet Freres Ltee.**, 1978 Parthenais St., Montreal, Que., CA About **$5,500,000.** TECHNICAL SCHOOL, Domaine St., Sulpice, MONTREAL, QUE. Provincial Dpt. Youth & Social Welfare, Parliament Bldgs., Quebec City, Que. Dufresne & Boulva, 1275 Hodge St. E., St. Laurent, Que., archts. CD 10/30/56.

Drolet Constr. Co., Ltd., 11 "B" Ave., Noranda, Que. CA approx. **$350,000.** (6 bidders) CHURCH and PRESBYTERY, NORANDA, QUE. La Fabrique de la Paroisse du Sacre Coeur de Noranda, 465 Murdock St. Noranda, Que. Jean Charles Fortin, 240 4th Ave. Val d'Or, Que., archt. LeFrancois, Laflamme & Gauthier, 2168 Mount Royal Ave. E. Montreal, Que., engrs. Awarded July 28.

Georges Bellemare & Fils Ltd., 258 St. Georges St. Cap de la Madeline, Que. LB **$553,000.** (6 bidders) CHURCH, YAMACHICHE, QUE. La Fabrique de la Paroisse de Ste. Anne de Yamachiche, Yamachiche, Que. Arthur Lacoursiere, 279 4th St., Shawinigan, Que., archt. Maurice Langlois, 128 Radisson St., Three Rivers, Que. engr. CD 8/8/57.

FOREIGN

HEAVY CONSTRUCTION—BA

▲ **Australia**—BA 9/2—Director General, Dpt. P. Wks., Canberra, constr. Upper Cotter Dam located on Upper Cotter River about 12 mi. upstream from present lower Cotter River Storage. $3,150,000.

PROPOSED PROJECTS

▲ **Ill., Waukegan**—City, City Hall, Dpt. P. Wks. constr. water storage tank & dist. mains form Sand St. $1,000,000. Bids about Nov. 1, for Stage "1" after completion of plans. John D. Bleck, Dpt. P. Wks., City Hall, staff engr. CD 2/26.

SEWERS, WASTE DISPOSAL

▲ **Fla., Venice**—City, City Hall, sewage disposal plant Over $1,000,000, Russell & Axon, P.O. Box 1431 Municipal Airport, Daytona Beach, consult. engrs.

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- ☐ Engine design calculation
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CPA 10

▲ **N. C., Mt. Airy**—City, City Hall, sewerage treatment plant, lines, etc. $1,350,000. J. N. Pease & Co., Inc., 119½ E. 5th St., Charlotte, consult. engrs.

▲ **Tex., Irving**—City, City Hall, drainage (open and closed) (a new 5-10 year program). $1,470,634. CD 5/2/56.

BRIDGES

▲ **Ga., Atlanta**—City, City Hall, viaducts on Techwood Dr. and Southern R. R. and Atlanta Terminal. $6,000,000. Robert & Co., 96 Poplar St., N.W., consult. engrs. CD 4/30.

STREETS AND ROADS

▲ **Tex., Irving**—City, City Hall, asphalt paving, $717,500; concrete type street paving, $4,009,182; asphalt paving on Sowers-Lively-Hurwitz Rd., loop 13 to Grauwyler Rd. (special), $782,500, (a new 5-10 year program). CD 5/2/56.

EARTHWORK, WATERWAYS

▲ **North Carolina**—Henderson Co. Soil Conservation Dist., City of Hendersonville, and Bd. Comrs. Henderson Co., watershed protection proj. for Mud Creek, 71,850 acres, approved by Dpt. Agriculture, Soil Conservation Service. $1,838,764.

▲ **Tex., Lubbock**—Lubbock Co. Water Control & Imprvt. Dist. No. 1, 902 Texas Ave., plans by Schmidt & Stuart, 1602 Ave. Q, dam and spillway. $1,000,000 Parkhill, Smith & Cooper, 201 Ave. R, Lubbock, consult. engrs. CD 5/2/56.

AIRPORTS

▲ **Okla., Oklahoma City**—HANGARS—Okla. City Airport Trust First National Bldg., 2 steel hangars at CAA Training Center, Will Rogers Airport. $2,000,000. Hudgins Thompson & Ball, 1411 Classen St., consult. engrs.

LATIN AMERICA

▲ **Panama**—HOSPITAL—Caja De Securo Social (Social Security Bank) Panama, plans 9 story, 260-bed hospital on site opposite School of Medicine, University of Panama. $2,000,000.

PUBLIC BUILDINGS

▲ **Calif., Los Angeles**—FOODS—Bd. Educ., 1425 S. San Pedro St., plans by Kistner, Wright & Wright, 1125 W. 6th St., 3 story, rein.-con. foods bldg., 400 W. Washington Blvd. $2,700,000. CD 6/9.

▲† **Calif., Sunnyvale**—MISSILE SYSTEMS PLANT—Lockheed Aircraft Corp., P.O. Box 504, Palo Alto, plans by George Vernon Russell, 558 S. Murphy, 1 story, mezzanine, 56,000 sq. ft. for refrigeration and electrical equipment and 600 ft. maintenance storage area, Missile Systems Plant. $7,000,000. Gould & Degenkolb, 149 California St., San Francisco, consult. engrs. Bids approx. 60 days. CD 7/28.

▲ **Conn., Burlington**—SCHOOL—Regional School Dist. No. 10, Consolidated School Bldg., Unionville, Regional School, Lyons Rd., for towns of Burlington and Harwinton. $1,000,000. Merchant & Minges, 1007 Farmingston Ave., West Hartford, consult. engrs. CD 2/27/57.

▲ **Conn., Weston**—SCHOOL—Town, Town Hall, plans by Gilroy & Gaydosh, 64 Wall St., Norwalk, 11 classrooms, gymnasium, shop, library, high school, Duke Tate Property. $1,135,000. Paul D. Harrigan, 909 Whalley Ave., New Haven, consult. engr. John W. Shallenberger, 177 State St., Bridgeport, electrical engr. CD 3/13.

▲† **Ga., Fort Benning**—HOUSING—U. S. Eng., Commanding Officer, repair and imprvs. to Wherry Housing, 880 units. $1,389,450. CD 9/18.

▲ **Ill., Chicago**—SCHOOL—City, Bd. Educ., 228 N. LaSalle, plans by Barry & Kay, 53 W. Jackson St., and J. C. Christiansen, 228 N. LaSalle St., 74,900 sq. ft. brick, Schiller Elementary School. $1,070,000. CD 6/11.

▲ **Ill., Chicago**—HOUSES—Chicago Housing Auth., 608 S. Dearborn St., plans by Mayo & Mayo, 35 E. Wacker, 9 story apartments, row on row housing, 43 to 51 and State Sts., Stage 1, 189 units, $2,100,000. Bids Sept. 1, 1959, plans by Graham Anderson Probst & White, 201 N. Wells, Stage 2, No. 237, 1,296 units, $14,200,000, Bids Nov. 1 1959; Stage 3, No. 237, 1,196 units, $13,200,000, Bids about Apr. 1, 1960. CD 2/58.

▲ **Ill., Evanston**—LIBRARY—Public Library, Church and Orrington Sts., plans by Meher & McGraw, 626 Grove St., 2 story, brick, stone Library, corner Church and Orrington Sts. $1,000,000.

▲ **La., New Orleans**—HOUSING—New Orleans Housing Auth., City Hall, plans by Curtis & Davis, 338 Baronne, 993 dwelling units (low-rent housing) near Union Passenger Terminal Station. $15,000,000. CD 9/15/49.

▲ **Mass., Boston**—OFF-STREET PARKING FACILITY—City, Real Property Bd., City Hall, plans by Samuel Glaser Assoc., 234 Clarendon St., off-street parking facility, Blackstone, Clinton, Fulton and John Sts. $1,500,000. CD 8/1.

▲ **Mass., Lynn**—SCHOOL—City of Lynn, Bldg. Comr., City Hall, Junior-Senior High School, Barry Park, West Lynn. $1,000,000.

▲ **Mass., Swampscott**—SCHOOL—Town, Junior High School Bldg. Comm., 24 Reddington St., plans by John M. Gray Co., 153 Milk St., Boston, Junior High School, Whitney Estates. $1,645,000. CD 1/31.

▲ **Mo., St. Louis County**—HOUSING—Housing Auth. of St. Louis County, 7740 Forsyth Blvd., Clayton, Zone 5, plans by Leo A. Daly Co., 3207 Olive St., St. Louis, Zone 3, housing, 70 units, Webster Heights. Over $1,000,000.

▲ **N. J., Paterson**—PARKING GARAGE—Paterson Parking Auth., City Hall, multi-decked parking garage. $1,000,000. Tippetts-Abbett-McCarthy-Stratton, 62 W. 47 St., New York, N.Y., consult. engrs.

▲ **O., Cleveland**—HUDSON BOYS FARM—Comrs. Cuyahoga Co., Courthouse, Zone 13, bond election Nov. 4, imprvs. to Hudson Boys Farm, Hudson. $1,575,000. CD 4/26.

▲ **O., Dayton**—LIBRARY—Bd. Trustees, Dayton-Montgomery Co. Library, one-mill. levy slated for Nov. 4 election was postponed until 1959 for central library. $2,400,000. CD 6/27.

▲ **Tex., Austin**—ARCHIVES—State Bd. Control, Main Admin. Bldg., plans by Adams & Adams, 500 W. Hutchins Pd., San Antonio, archives bldg. $2,500,000. CD 5/3/57.

▲ **Tex., Canyon**—SCHOOL—Canyon Ind. School Dist. plans by Townes & Townes, 1208 W. 10th St., Amarillo, high school. $1,000,000.

▲ **Tex., Pampa**—JUNIOR COLLEGE—Pampa Ind. School Dist., Pampa, Junior College. $1,000,000.

▲ **Tex., Perryton**—SCHOOL—Perryton, Ind. School Dist., plans by Brasher, Spencer & Goyette, 2118-34th St., Lubbock, high school $1,085,000; elementary school, $400,000. CD 8/5.

▲ **Tex., San Antonio** — SCHOOLS — North East Ind. School Dist., C. L. Camp, Lockhill-Selma Rd., plans by J. Fred Buenz, 4900 Broadway, and Herbert E. Kellner, 406 Austin Hy., Elementary School No. 1, $425,000; Elementary School No. 2, $375,000; group of classrooms. $500,000.

▲ **Wis., Madison**—GYMNASIUM, etc.—University of Wisconsin, Madison, gymnasium, swimming pool. $2,000,000.

COMMERCIAL BUILDINGS

▲ **Ala., Mountain Brook**—OFFICE—Jackson Securities & Investment Co., 213-N 21 St., Birmingham, one 12,000 sq. ft. and one 60,000 sq. ft. 2 office bldgs. $1,250,000.

▲ **Ark., Little Rock**—NURSING HOME—St. Vincents Infirmary, W. Markam and Hays Sts., plans by Bruggeman, Swaim & Allen, Gazette Bldg., 3 story, rein.-con., brick, etc. nursing home, Proj. Ark.-3-CH-28H, $1,300,000. CD 5/19.

▲ **Calif., Beverly Hills**—MEDICAL OFFICE—J. V. Cameo Developer, 9713 Santa Monica Blvd., 4 story, 60,000 sq. ft. medical office bldg., Canon Dr. and Brighton Way. $1,500,000.

▲ **Calif., Decoto**—HOSPITAL—California Masonic Bd., Niles Rd., plans by Anderson, Hyde & Anderson, Bank of America Bldg., Oakland, 4 story, rein.-con. hospital. $1,000,000.

▲ **Calif., Healdsburg**—ACADEMY—Seventh Day Adventist Conference of No. Calif., c/o President, 1811-11th St., Oakland, plans by Pacific Union College, Design Dpt., Box 595, Angwin, Religious Boarding Academy (former Digger Bend Ranch). $2,000,000. CD 7/10.

▲ **Calif., Los Angeles**—OFFICE, etc.—Diners Club, Inc., 910 N. LaCienega Blvd., plans by Pereira & Luckman, 8534 Sunset Blvd., 30 story office, heliport, multi-level parking Wilshire Blvd. and McCarthy Vista. $10,000,000.

▲ **Colo., Englewood**—APARTMENT, etc.—Owner, c/o Jerome K. Nagel, archt., 901 Sherman, Denver, 206 unit apartment, parking areas, swimming pool, $2,000,000.

▲ **Colo., Pueblo**—HOTEL—L. L. Stroud Enterprises, 2736 Central Ave., Phoenix, Ariz., plans by Ralph D. Peterson, 1701 Gilpin, Denver, 150 room Town Park Hotel. $1,500,000. CD 1/13.

▲ **Conn., Manchester**—SCHOOL—Archdiocese of Hartford, Chancery Office, 140 Farmington Ave., Hartford, Roman Catholic High School, Hilliard St. $1,000,000.

▲ **Conn., Marlborough** — HOUSES — Anwelt Corp., 157 Cleghorn St., Fitchburg, Mass., 130 houses, North East section. $1,300,000.

▲ **Conn., New Haven**—SHOPPING CENTER—Food Basket of New Haven, Inc., 875 N. High St., East Haven, plans by Charles Y. Abramowitz, 52 Goffe Terrace, shopping center, Amity Rd. $5,000,000. CD 7/29.

▲ **Conn., West Hartford**—SCHOOL—Archdiocese of Hartford, Chancery Office, 140 Farmington Ave., Hartford, Roman Catholic High School, N. Main St., $1,100,000.

▲ **Ill., Evanston**—HEALTH CENTER—Northwestern University, 619 N. Clark St., Chicago, plans by Holabird, Root & Burgee, 180 N. Wabash Ave., Chicago, Searle Health Center (Clinic and Student Hospital,) $1,000,000. CD 5/25/56.

▲ **Ill., Markham**—SHOPPING CENTER—I. J. Lewis, 176 Adams, Chicago, Zone 3, plans by Sie Morris, 134 N. LaSalle St., shopping center, 40 to 50 stores, paving area for 2,000 cars, $2,000,000. Bids in 2 weeks.

▲ **Ill., Skokie**—HOSPITAL—Bd. Trustees, Skokie Valley Community Hospital, 64 Old Orchard St., Skokie Valley Community Hospital, Simpson St., and Gross Point Rd., $4,250,000.

▲ **Ill., Wilmette**—APARTMENT—Morris Pancoe, 1018 W. Wabash St., Chicago, plans by Friedman, Alschuler & Sincere, 223 Jackson St., Chicago, Zone 6, 3 story, 150 x 350 ft. apartment. $1,000,000. Bids in about 4 months.

▲ **Ill., Wilmington**—HOMES, etc.—Wilmington Development Co., 600 homes, shopping center, 17 mi. south of Joliet. $1,000,000.

▲ **Md., Suitland**—SCHOOL—Archdiocese of Washington, 1721 Rhode Island Ave. N.W., Wash., D.C., plans by Philip Schreier, 1420 K St. N.W., Wash., D.C. girl's high school for The Bernadine Sisters, Villanova, Pa. $1,600,000.

▲ **Mass., Andover**—RESIDENTIAL DEVELOPMENT—Realty Constr. Co., 303 Salem St., Reading, residential development, vicinity of Lovejoy Rd. $4,000,000.

▲ **Mo., St. Louis County**—JUNIOR SEMINARY—Maryknoll Fathers, 4569 West Pine Blvd., St. Louis, Zone 8, plans by Leo A. Daly Co., 3207 Olive St., St. Louis, Zone 3, Junior Seminary. $1,000,000.

▲ **N. H., Manchester** — SCIENCE, etc. — St. Anselm's College, Father Bernard Holmes, dir. Development, College Rd., science library and dormitory, $1,000,000. CD 4/2/54.

▲ **N. J., North Plainfield**—SHOPPING CENTER—Sommers Bros. Constr. Co., Rte. 9, Woodbridge, plans by Lathrop Douglass, 518 5 Ave., New York, N. Y., 200,000 sq. ft. shopping center, North Ave. and Rte. 22. $5,000,000.

▲ **N. Y., New York**—APARTMENT, etc.—Seymour & Edward Kimmel, 65 E. 76th St., Zone 21, plans by H. F. Feldman, 415 Lexington Ave, Zone 17, apartment and garage, 799-805 Park Ave. and 101-11 E. 74th St. $1,350,000.

▲ **O., Cleveland**—HOTEL AND OFFICE—Superior-Ninth Realty Co., Joseph S. Silber, pres., Leader Bldg., Zone 14, plans by Jack Alan Bialosky Assoc., Superior Bldg., Zone 14, 1,000 room hotel; 17 story, 185,000 sq. ft. office bldg., E. 6th St., Superior Ave., E. 9th St., Vincent Ave. $50,000,000.

▲ **O., Hamilton**—HOMES, etc.—Brookwood Homes, Inc., 1806 Sunset Dr., 600 homes, shopping center and apartment dwellings on site between Wasserman Rd. and Millville Pike. $10,000,000.

▲ **O., Mayfield Heights**—MEDICAL, etc.—DiCarlo Mason & Bldg. Co., 5576 Mayfield Rd., Cleveland, Zone 24, medical bldg., apartments and shopping center to be built when Hillcrest Hospital project goes ahead. $5,000,000.

▲ **Pa., Harrisburg**—SHOPPING CENTER—Food Fair Properties, Inc., 2223 E. Allegheny Ave., Phila., shopping center on 80 acre tract along US Rte. 22 in community of Colonia Park, Lower Paxton Twp. $5,000,000.

▲ **Tenn., Knoxville**—SHOPPING CENTER—McClure Realty Co., c/o David Lieberman, 605 Walnut St., shopping center. $1,500,000.

▲ **Tex., Corpus Christi**—MOTOR HOTEL, etc.—De Pineda Development Corp., Bruce L. Collins, Sr., 3352 Ocean Dr., 104 units motor hotel. $850,000; multi-story hotel $1,000,000, on North Beach.

▲ **Tex., Houston**—SHOPPING CENTER—Russell W. Nix, Developer, 6407 Harrisburg St., (Montclair Shopping Center) plans by Irving R. Klein & Assocs., 1317 Austin St., Section 1; shopping center unit $3,000,000; Section 2 shopping center to be across road from Section No. 1 $2,000,000. Jerold L. Davis, 3400 Montrose St., consult. engr. CD 1/20.

▲ **Wash., Mercer Island**—HOUSES—Terminal Constr. Co., c/o Securities Mortgage Co., Securities Bldg., 240 houses at Mercerdale, $2,000,000.

▲ **Wash., Seattle**—MOTEL—Downtown Co., c/o University Enterprises Co., General Ins. Bldg., Zone 5, plans by Lindahl & Bacon, 20-102 N.E., Bellevue, 3 story motel, 6 Ave. between Virginia and Lenora Sts. $1,500,000.

▲ **Wis., Cedarburg**—MOTOR HOTEL—J. L. Callan, Inc., 4417 W. North Ave., Milwaukee, 48 unit motor hotel. $1,000,000.

INDUSTRIAL BUILDINGS

▲ **Conn., New Haven**—FACTORY—Sargent & Co., 45 Water St., plans by Douglas Orr, 111 Whitney Ave., 1 story, 400,000 sq. ft. factory, $4,000,000. CD 7/24.

▲ **Ill., Galesburg**—PLANT—Butler Mfg. Co., 7400 E. 13 St., Kansas City, Mo., plant, 24 acre site, $7,000,000.

▲ **N. Y., Niagara Falls**—PLANT—Carborundum Co., Buffalo Ave., plant to manufacture grinding wheels. $6,000,000. CD 4/7/47.

▲ **N. Y., Somerset**—POWER GENERATING STATION—New York State Gas & Electric Co., 123 S. Cayuga, Ithaca, power generating station. $2,000,000.

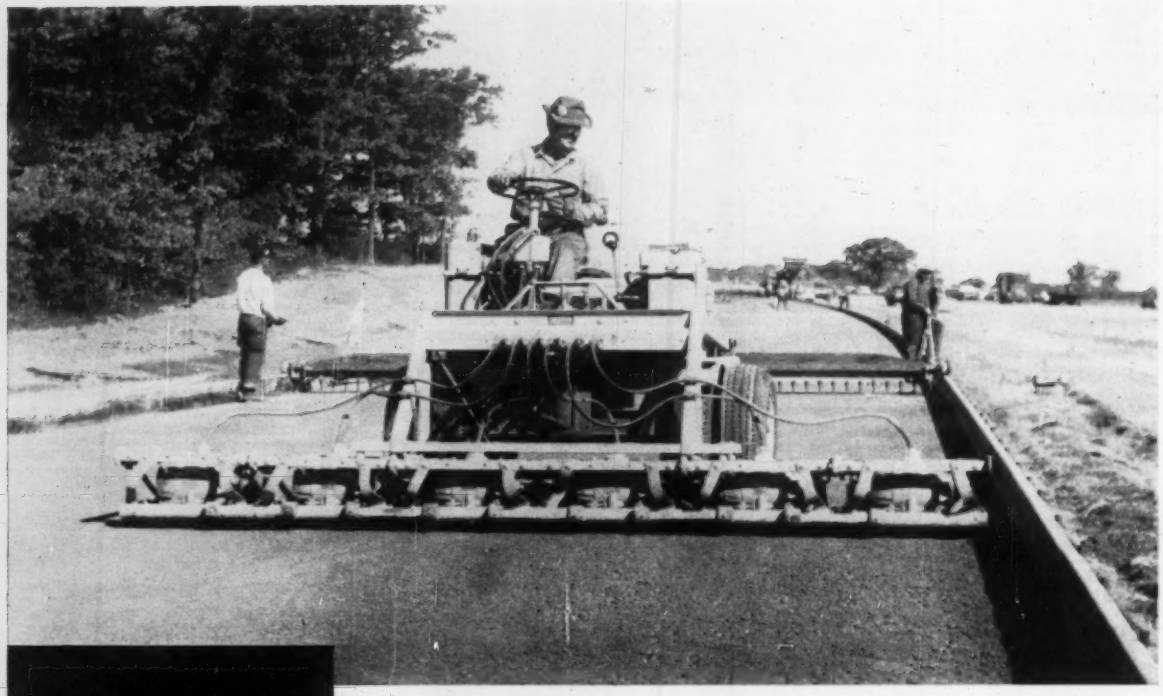
▲ **Tex., El Paso**—INDUSTRIAL TERMINAL—Bernard Rodsky, 1st National Bank Bldg., industrial terminal. $1,750,000; general repair shop, $250,000, 12.7 acre site in industrial tract.

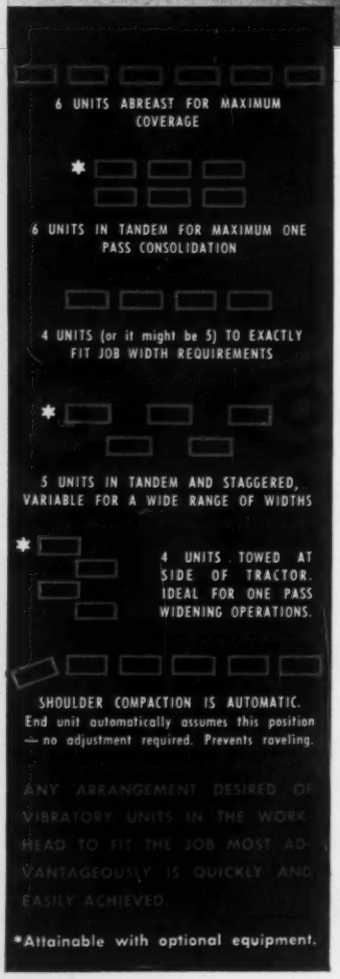
▲ **Tex., Ennis**—PLANT—Flintkote Co., Ennis, and 30 Rockefeller Plaza, New York, N. Y., 2nd increment of asphalt roofing mfg. plant. $4,000,000.

UNCLASSIFIED

▲ **Idaho, Boise** — COLISEUM — City, City Hall, city coliseum, site of Ann Morrison Memorial Park. $1,500,000-$2,000,000.

▲ **Wyoming**—GAS PIPE LINE—Pacific Northwest Pipeline Co., Esperson Bldg., Houston, Tex., 51.3 mi. 30 in. gas pipe line in Lincoln and Sublette Counties, $5,542,100. CD 4/18/55, under Texas, Oklahoma, etc.




6 UNITS ABREAST FOR MAXIMUM COVERAGE
6 UNITS IN TANDEM FOR MAXIMUM ONE PASS CONSOLIDATION
4 UNITS (or it might be 5) TO EXACTLY FIT JOB WIDTH REQUIREMENTS
5 UNITS IN TANDEM AND STAGGERED, VARIABLE FOR A WIDE RANGE OF WIDTHS
4 UNITS TOWED AT SIDE OF TRACTOR. IDEAL FOR ONE PASS WIDENING OPERATIONS.
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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
August 26 Massachusetts

▲† **Vermont**—BA On Or About 10/8—U. S. Eng., Area Office, 310 State St., Springfield, Mass. constr. of Townshend Dam and reservoir, West River, consisting of following, control and diversion of water at dam site; preparation of site, constr. of earth and rock fill dam, constr. outlet works consisting of an intake tower, concrete conduit and approach and discharge channel constr. side channel type spillway consisting of an approach channel, concrete weir and rock channel, constr. service bridge access bridge, and road across the dam, constr. utility area, incl. bldg. and remodeling existing bldg. for resident engineers office, ENG-19-016-59-7. $6,000,000. Plans deposit $50. CD 9/5.

BUILDINGS—BA

N. H., Plymouth—DORMITORY—BA 9/11—State, Dpt. P. Wks. & Hys., State House, Concord, men's dormitory, Teachers College. $655,000. Plans deposit $25. Tracy & Hildreth, 4 Davis Court, Nashua, archts. CD 10/23.

HEAVY CONSTRUCTION—LB & CA

VERMONT—State Hy. Dpt., State Office Bldg., Montpelier, Bids opened 8/8,

Vt.—**Ralph B. Goodrich, Inc.**, 211 Himesburg Rd., South Burlington, Vt. LB **$338,733**, est. $300,000. grade, etc., incl. 2 span composite WF beam bridge, Vt. Rte. 107, the Bethel Gaysville Rd. Proj. DF-022-1 (3), Bethel;

Vt.—**Caledonia Sand & Gravel Co., Inc.**, 26 Railroad St., St. Johnsbury, Vt. LB **$534,566**, est. $500,000. grade, etc. and 1 span concrete T-beam bridge, Vt. Rte. 105A, the North Troy-Richford Rd. Proj. F 034-2 (1) Jay and Richford. CD 7/29.

CONNECTICUT—State Hy. Dpt., State Office Bldg., Hartford, Bids opened 7/11,

Jarvis Constr. Co., Inc., 5 Dover Rd., Manchester, Conn. LB **$681,101**. (6 bidders), Proj. 100-53, c. conc. 12,552 lin. ft. reconstr. Route U. S. 5, North Haven. CD 7/31.

▲† **Beacon Constr. Co.**, 102 Hanover St., Allston, Mass. LB **$645,000**, addnl. pavements, minor structures for Nike Batteries, in Underground Missile Storage Structures, etc., Bridgeport Defense Area, Bridgeport; LB **$630,000** addnl. pavements, minor structures for Mike Batteries, in Underground Missile Storage Structures, Hartford Defense Area, Hartford, ENG-19-016-59-10, CONNECTICUT. U. S. Eng., 310 State St., Springfield, Mass. Bids July 31. CD 7/11, under Conn., Bridgeport.

Barr Constr. Corp., 250 Allen St., Meriden, Conn., LB **$419,128**, 17,700 ft. 8- to 24-in. sanitary sewers, SE section with manholes, appurtenances, 2,500 ft. 6 in. concrete lateral, HARTFORD, CONN. Metropolitan Dist., Bd. Contr. & Supply, 115 Broad St., Hartford, Conn. Bids July 10. CD 1/27.

BUILDINGS—LB & CA

▲ **George B. H. Macomber Co.**, 25 Gordham Rd., Allston, Mass. LB **$1,621,500**. 2 DORMITORIES, Housing and Home Finance Agency Proj., Mass. 19-CD-32 (D), MEDFORD, MASS. Tufts University Bd. Trustees, Medford, Mass. CD 8/5.

R. E. Bean Constr. Co., Inc., 29 Island St., Keene, N. H. LB **$464,649**. GYMNASIUM and swimming pool, KEENE, N. H. Young Men's Christian Assoc., 31 West St., Keene, N. H. Bids Aug. 7. CD 8/5.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
August 26 Maryland — August 29 Pennsylvania
September 2 New Jersey
STREETS AND ROADS
August 26 Maryland — August 28 New York
August 29 Pennsylvania — September 2 New Jersey

New York—BA 9/11—The Power Auth. of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y., furnishing, del. towers, guides and sills for Lewiston Power Plant and conduit outlet stoplogs structure of waterways, Niagara Contr. NP-24, Spec. PA-N-23012. Plans deposit $10. Uhl, Hall & Rich, 230 Congress St., Boston 10, Mass., engrs. CD 8/15/57.

BUILDINGS—BA

▲ **N. Y., East Meadow**—SCHOOL—BA 8/26—Bd. Educ., Union Free School Dist. No. 3, Town of Hempstead, East Meadow High School, East Meadow, 600-pupil 1 story East Meadow High School addn., Carman Ave. $1,400,000. Frederick P. Wiedersum Assocs., 65 Roosevelt Ave., Valley Stream, archts. CD 2/8/57.

▲ **N. Y., New York**—HOUSING—BA 9/9—New York City Housing Auth., 299 Broadway, New York, Zone 7, (1) foundations and general construction (2) heating and ventilating (3) electrical work (4) plumbing at Benjamin Franklin Houses (Proj. NYC-27) Section I, incl. 5 buildings Nos. 1, 2A, 2B, 3, 4 and 5 in area bounded generally by 2 Ave., E. 106 St., 3 Ave. and P. S. 117, Manhattan Boro. Plans deposit $75. CD 8/8/57.

HEAVY CONSTRUCTION—LB & CA

▲ **Vanguard Constr. Co.**, 360 Lexington Ave., New York 17, N. Y., CA **$1,669,146**. Contr. 1 general constr. primary sewage treatment plant (A) head house (B) two concrete grit removal chambers (C) chlorine feed house (D) concrete settling basins (E) two sludge digester tanks (F) 650 ft. concrete pipe inteceptor sewer (G) all operating equip. and facilities (H) all related work, BINGHAMTON, N. Y., City, Bd. Contract & Supply, Council Chambers City Hall, Binghamton, N. Y. Bids July 30. CD 8/5, under LB.

▲ **Rand Constr. Co.**, 114 E. 32 St., New York 16, N. Y. CA **$1,028,000**. (6 bidders), Pier Shed for Pier No. 3 at Brooklyn-Port Authority Piers, Contr. BP-170.002. BROOKLYN, N. Y. The Port of New York Authority, 111 Eighth Ave., New York 11, N. Y. Bids July 8. CD 7/10, under LB.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,

Pa.—**Mack Paving & Constr. Co.**, Luzerne and C Sts., Phila. 24, Pa. CA **$1,504,770**, est. $2,994,720. constr. 5,811 ft. separated hy. of plain c. conc. base with bit. surf. Vare St. between 28th and Tasker Sts. (Proj. 814-1) FAI, Phila. Phila., Co. CD 7/16, under LB;

Pa.—**H. J. Williams Co., Inc.**, 150 S. Sumner St., York, Pa. CA **$2,289,375**, est. $2,500,000. 13,808 ft. divided hy. c. conc. 24 ft. wide, each side of divisor 2 bridges, L.R. 1001 FAI a section Penn-Can Hy., New Milford Boro, New Milford and Great Bend Twps., Susquehanna Co. Awarded Aug. 8. CD 7/28, under LB & Pa. Hys. Dpt. as owner.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,

F. D. Kessler, Inc., Northumberland, Pa. CA **$1,392,562** constr. 37,372 ft. c. conc. 24 ft. wide 2 bridges. T. R. 30 between St. Thomas and Ft. Louden Proj. 727-1 Peters and St. Thomas Twps., Franklin Co. Bids July 11. CD 7/16, under LB.

▲ **PENNSYLVANIA**—Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg,

Stabler Constr. Co., 635 Lucknow Lane, Harrisburg, Pa., CA **$1,019,762**, 62,503 ft. crushed aggreg. base with bit. surf., 22 ft. wide. T. R. 115 between Ricketts Glen and Rte. 309, Fairmount, Ross and Lake Twps., Luzerne Co. CD 7/29, under LB.

Gaspirini Excavating Co., Blakely, Pa. CA **$399,385** imprv. Elmhurst Dam near Scranton, PENNSYLVANIA. Scranton Spring Brook Water Service Co., 135 Jefferson Ave., Scranton, Pa. Bids July 1. CD 6/16.

DELAWARE—State Hy. Dpt., Dover,

Empire Constr. Co., 31 S. Calvert, Baltimore, Md. CA **$577,868**. reconstruct 2 bridges over railroad, along Route 13, at Farnhurst, New Castle Co. Bids July 7. CD 7/15, under LB.

BUILDINGS—LB & CA

Witford Co., Wellsville, N. Y., LB **$422,016**. Central SCHOOL addn., swimming pool, ANDOVER, N. Y. Andover Central School Dist., Andover, N. Y. Bids July 10. CD 7/3,

▲ **Parkview Estates**, c/o Ackerman Harris & Wolff, Jericho Turnpike, Commack, N. Y., Owner Builds, **$2,400,000**. 200 HOUSES, Brentwood Rd. between Commack and Candelwood Rds., BRENTWOOD, N. Y.

Kub Constr. Corp., 16 Court St., Brooklyn 2, N. Y. Owner Builds, **$600,000**. 6 story APARTMENT, for 73 families and 47-car garage, 4211 Ave. K, BROOKLYN, N. Y. CD 6/19.

Mill Developing Corp., 2430 E. 65 St., Brooklyn 10, N. Y., Owner Builds, **$525,000**, 35 HOUSES, McMullen Dr. North, BROOKLYN, N. Y. Kavy & Kavovitt, 44 Court St., Brooklyn 2, N. Y., archts.

Auburndale Estates Homes, c/o A. H. Salkowitz, archt., 87-25 Homelawn St., Jamaica 32, N. Y., Owner Builds, **$400,000**. 20 HOUSES, 191 St. and Northern Blvd., FLUSHING, N. Y.

Pickwick Park Homes, c/o Alfred Wolff, Jericho Turnpike, Commack, N. Y., Owner Builds, **$400,000**. 25 HOUSES, Veterans Memorial Highway, HUNTINGTON, N. Y.

▲ **Castagna & Son, Inc.**, 2110 Northern Blvd. Manhassett, N. Y., CA **$1,937,936**. general contract, JUNIOR-SENIOR HIGH SCHOOL, JERICHO, N. Y. Bd. Educ., Jericho, N. Y. Bids July 23. CD 7/29, under LB.

Goldhill Enterprises, 1616 Northern Blvd., Manhasset, N. Y., Owner Builds, **$500,000**. 20 HOUSES, Whistler Rd., MUNSEY PARK, N. Y.

Roundtree Estates, c/o Herman N. York, archt., 90-04 161 St., Jamaica, N. Y., Owner Builds, **$425,000**. 25 HOUSES, Old Country Rd., PLAINVIEW, N. Y.

Audrey Gardens Homes, c/o Mike-Steve Corp., 134 E. Merrick Rd., Lindenhurst, N. Y., Owner Builds, **$700,000**. 87 HOUSES, East Main St. and Old Country Rd., RIVERHEAD, N. Y.

Riviera Ridge Homes, c/o Richard J. Block, Inc., 1276 Broadway, Hewlett, N. Y., Owner Builds. **$475,000**, 25 HOUSES, Kings Park Rd., north of Jericho Turnpike, SMITHTOWN, N. Y.

L-D Bldg. Co., Latrobe, Pa. CA **$867,000**. general constr. MAINTENANCE BLDG. for State Hys. Dpt. INDIANA, PA. Pa. Dpt. Property & Supplies, Box 382, Harrisburg, Pa. Bids July 23, awarded Aug. 8. CD 7/25, under LB.

W. M. Chappell, Inc., 1346 Good Hope Rd. S. E., Wash., D. C. LB **$965,000**, Plummer ELEMENTARY SCHOOL, Texas Ave. and "C" Sts. S. E., WASH., D. C. D. C. Govt. Dpt. Bldgs. & Grounds, 499 Pa. Ave. N. W., Wash., D. C. Bids July 1. CD 6/9.

▲† **Spencer, White & Prentis, Inc.**, 10 E. 40 St., New York 16, N. Y. CA **$1,560,000**. excavation and pile work at Museum of History & Technology, Smithsonian Institute, WASH., D. C. General Services Admin., P. Bldgs. Serv., 19 and F Sts. N. W. Wash. 25, D. C. Bids July 15. CD 7/17, under LB.

Wallace Engineering & Constr. Co., Girard Trust Bldg., Phila., Pa., LB **$860,000**. (4 bidders) ELEMENTARY SCHOOL, Tanglewood, NEWARK, DEL., Special School Dist., Newark, Del. CD 6/26.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
August 26 West Virginia
STREETS AND ROADS
August 26 West Virginia — September 5 Kentucky

S. C., Lake City—BA 9/16—City, City Hall, sewage treatment plant and lines, $800,000-$900,000. Plans deposit $50. B. P. Barber & Assocs., 1418 Marion St., Columbia, engrs. CD 8/12 under LB.

Ky., Louisville—BA 9/19—Mertopolitan Sewar Dist., 412 W. Market St., Zone 2, Contr. 314, Southwestern Pumping Station. Over $500,000. Plans deposit $50. Metcalf & Eddy, 1300 Statler Bldg., Boston 16, Mass., engrs. CD 3/15/56.

BUILDINGS—BA

Ky., Louisville—WAREHOUSE, OFFICE—BA 9/3—Cooperative Seed & Farm Supply Co., 7 and Main Sts., Richmond, Va., 150,000 sq. ft., brick, concrete block, steel frame warehouse and office, near Strawberry yards, $750,000. Torrence & Druling & Assoc., 304 W. Cary St., Richmond, Va., engrs. CD 5/1/52.

▲† **Va., Langley**—HEADQUARTERS—BA 9/9—General Services Admin., General Services Bldg., Room 3340 19th and F Sts. N. W., Wash. 25, D. C., Central Intelligence Agency Headquarters Bldg., completion of excavation and foundation work, foundations generally to 1st floor level, incl. certain utilities service lines, conduits, etc. excavating and backfill in connection with foundation work and misc. structural and ornamental steel and iron work. Appr. No. 47-11 x 2300, Proj. No. 44122 PCAE. CD 8/7/56.

HEAVY CONSTRUCTION—LB & CA

▲ **SOUTH CAROLINA**—State Hy. Dpt., Hotel Jefferson, Columbia,

S. C.—**Sloan Constr. Co., Inc.**, Peoples National Bank Bldg., P.O. Box 747, Greenville, S. C. CA **$1,112,793**. grading, etc. 5.938 mi. Int. Rte. 85 and connection from US Rte. 25 to Rd. 183 with connection to Rte. 250 near the city of Greenville, S. C. Dockets Nos. 4.435.2 and 23.398, F.A. Projs. Nos. I-IG-85-2 (4) (I-IG-301-1 (5) & IN-Ing-A-85-2 (14) (In-Ing 2600 4) Anderson and Greenville Counties.

S. C.—**Robert E. Lee & Co., Inc.**, P.O. Box 417, Manning, S. C. and **Fox Constr. Co., Inc.**, Lexington, S. C. CA **$2,607,751**, grading, etc. 8.381 mi. Int. Rte. 26 from Rte. 296 to US Rte. 176. S. C. Docket No. 42.487 F.A. Projs. Nos. I-26 2 (29) (I-304-2 (29) & I-26-1 (2) (I-304-1 (2) Spartanburg Co. Bids June 17. CD 6/26, under LB.

▲ **Westinghouse Electric Corp.**, Box 2008, Realty Bldg., Savannah, Ga., CA **$4,200,000**. dist. switchboard for Hartwell Dam, Hartwell Proj., Savannah River, ENG-09-133-58-12, GEORGIA and SOUTH CAROLINA. U. S. Eng., 200 E. St. Julian St., Savannah, Ga. CD 9/14/55.

Mac's Contr. Co., Inc., 1606-2nd Place S., Birmingham, Ala., LB **$437,500**, streets, sewers, etc., in connection with Avondale Housing, BIRMINGHAM, ALA. Housing Auth., 600 N. 24th St., Birmingham, Ala. Bids 8/5. CD 7/9.

▲ **Chicago Bridge & Iron Co.**, Pan American Life Bldg., Baton Rouge, La., CA **$913,480**, Job 1084-2-C 8 welded steel grain tanks and Job 1084-2D, 20 welded steel grain tanks, addnl. port facilities, BATON ROUGE, LA. Greater Baton Rouge Port Comn., 141 N. Jefferson St., Port Allen, La. Grand total $1,397,102. Bids July 17. CD 7/25, under LB

H. E. Wiese, Inc., Box 2325, Baton Rouge, La. CA **$229,353**, Job 1084B, clearing, concrete fdn., relocation works, electrical control bldg., (Baton Rouge, La.);

Raymond Concrete Pile Co., 242 Focis St., Metaire, La., CA **$195,000**, Job 1084-2A, piling work (Baton Rouge, La.).

Lee-Emmert Cont. Engr., 7602 N. Central Expressway, Dallas, Tex., CA **$807,000**. mechanical work Job 1084 2-E, supporting towers, trusses and spouting addnl. grain facilities, BATON ROUGE, LA. Greater Baton Rouge Port Comn., 141 N. Jefferson St., Port Allen, La. Bids Aug. 4. CD 8/12, under LB.

▲† **McWilliams Dredging Co.**, Box 584, New Orleans, La., CA **$1,797,942**, 10,333,000 cu. yd. outflow channel dredging Old River, Item D Inv. No. 58-334, CONCORDIA PARISH, LA., U. S. Eng., foot of Prytania St., New Orleans, La. Bids July 24, awarded 8/6. CD 8/1, under LB.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort, Bids opened Aug. 8,

Ky.—**Adams Constr. Corp.**, P.O. Box 386, Paintsville, Ky., LB **$485,616** (5 bidders) b. conc. surf. various

roads 51.727 mi. SP Group 66 (1958) Pike Co.; LB $241,955 (4 bidders) b. conc. surf. 26.431 mi. various roads S.P. Group 67 (1958), Knott and Lechter Counties; bit. LB $117,207, bit. surf. 4.001 mi. Ulvah-Line Fork Road RS 67-599, Lechter Co.; LB $152,454 (3 bidders) bit. surf. 5.6 mi. Inez-Turkey Creek Rd., RS-80-201, Martin Co.; LB $237,846 (2 bidders) bit. road mix surf. 22.146 mi. various roads, RS Group 73 (1958) Pike Co.; LB $125,347 (2 bidders) bit. surf. 6.261 mi. various roads RS Group 26 (1958) Floyd Co.; LB $101,422 (2 bidders) bit. road mix surf. 12.101 mi. various roads, RS Group 87 (1958) Pike Co.;

Ky.—**Ellis, Kelly & Co.**, 600 Breckinridge St., Owensboro, Ky., LB $96,427 (2 bidders) bit. road mix surf. 14.712 mi. various roads, RS Group 74 (1958) Trigg Co.; LB $79,714 (2 bidders) bit. surf. 4.95 mi. various roads, RS Group 75, (1958), Calloway Co.;

Ky.—**R. B. Tyler Co.**, 1446 Levering St., Louisville 8, Ky., LB $106,419 (1 bidder) bit. conc. surf. 14.502 mi. various roads, SP Group 49 (1958), Carlisle and Hickman Counties; LB $77,685 (1 bidder) bit. surf. 5.942 mi. various roads RS Group 83 (1958), Hickman Co.;

Ky.—**Kelly Contr. Co.**, 317 Wallace Ave., St. Matthews, Ky., LB $146,062. b. conc. surf. 18.294 mi. various roads, SP Group 53 (1958), Pulaski and Rockcastle Counties; LB $238,853, bit. surf. 20.463 mi. various roads RS Group 72 (1958), Laurel, McCreary and Whitley Counties;

Ky.—**Kentucky Road Oiling Co.**, 315 High St., Frankfort, Ky., LB $333,766 (4 bidders) bit. conc. surf. 44.364 mi. various roads, SP Group 57 (1958), Owsley-Breathitt and Magoffin Counties; LB $252,888, b. conc. surf. 15.8 mi. various roads RS Group 60 (1958), Breathitt, Morgan and Wolfe Counties;

Ky.—**Fount Crow Inc.**, Beaver Dam, Ky., LB $75,045. trafficbound 3.554 mi. RS 92-374, Ralph-Deanefield Rd., Ohio Co.; LB $77,902 (1 bidder) traffic bound, 2.565 mi. Ralph Bells Run Road, RS 92-334, Ohio Co.;

Ky.—**Breslin Constr. Co.**, 1433 S. Preston St., Louisville 17, Ky., LB $118,872 (2 bidders) b. conc. surf. 9.007 mi. Merrick's Store Lisman Rd., RS Group 63 (1958), Crittenden and Webster Counties; LB $174,423 (2 bidders) bit. surf. 13.1 mi. various roads, RS Group 67 (1958), Grayson, Larue and Hart Counties;

Ky.—**Robert L. Carter Co.**, 207 E. Campbell St., Frankfort, Ky., LB $133,410. b. conc. surf. 19.74 mi. various roads, SP Group 55 (1958), Owen and Grant Counties; LB $279,036 (3 bidders) bit. conc. surf. 32.933 mi. various roads, SP Group 64 (1958), Lawrence, Carter, Boyd and Greenup Counties;

Ky.—**Corum & Edwards, Inc.**, Madisonville, Ky., LB $99,081 (1 bidder) bit. surf. 7.95 mi. Old Sand Lick Road, RS 17-642, Caldwell Co.; LB $133,258 (2 bidders) b. conc. surf. 18.616 mi. various roads, SP Group 61 (1958), Butler and Muhlenberg Counties;

Ky.—**McDade & McDade**, Mears St., Fulton, Ky., LB $81,985 (2 bidders) bit. surf. 6.461 mi. Burna-Bayou Rd., RS 70-290, Livingston Co.; LB $224,210 (2 bidders) bit. surf. 18.239 mi. various roads, RS Group 68 (1958), Graves and Marshall Counties;

Ky.—**R. E. Gaddie, Inc.**, P. O. Box 343, Bowling Green, Ky., LB $76,868. bit. surf. 5.023 mi. various roads, RS Group 58 (1958), Adair and Cumberland Counties; LB $101,341. bit. surf. 8.413 mi. various roads, RS Group 62 (1958), Clinton and Wayne Counties;

Ky.—**East Kentucky Paving Corp.**, P. O. Box 368, Grayson, Ky., LB $97,359 (1 bidder), b. conc. surf. 6.98 mi. various roads, RS Group 64 (1958), Elliott and Rowan Counties; LB $73,664 (2 bidders) bit. road mix surf. 7.982 mi. Blaine-Webbville Rd., RS 64-253, Lawrence Co.;

Ky.—**Kentucky-Virginia Stone Co.**, P. O. Box 137, Middlesboro, Ky., LB $141,155 (2 bidders) bit. surf. 4.831 mi. US 119-Brownie's Creek Rd., RS-7-484, Bell Co.;

Ky.—**Bennam Adams Constr. Co. Inc.**, R.F.D. 2, Winchester, Ky., LB $115,288 (4 bidders), trafficbound, 3.819 mi. Susie-Hidalgo Rd., SP 116-539, Wayne Co.;

Ky.—**Cantrill Constr. Co.**, 700 N. Broadway, Lexington, Ky., LB $251,784. b. conc. surf. 32.715 mi. various roads SP Group 52 (1958), Laurel and Knox Counties;

Ky.—**L. P. Cavett Co.**, 511 Shepherd Ave., Lockland 15, O., LB $117,373 (3 bidders) bit. surf. 10.332 mi. various roads, RS Group 84 (1958), Harrison and Nicholas Counties;

Ky.—**Cumberland Constr. Co.**, Burkesville, Ky., LB $138,975, bit. surf. 11.213 mi. various roads, RS Group 59 (1958), Allen and Barren Counties;

Ky.—**Elizabethtown Paving Co.**, 205-B S. Mulberry St., Elizabethtown, Ky., LB $92,710 (2 bidders) bit. surf. 5.022 mi. various roads, RS Group 81 (1958), Larue and Green Counties;

Ky.—**Elam & Wingo Constr. Co.**, West Liberty, Ky. LB $134,673 (3 bidders), b. conc. surf. 1.492 mi. to Dewey Park, Boat Dock, SP 36-1616, Floyd Co.;

Ky.—**C. C. Hall**, Paintsville, Ky., LB $78,067 (4 bidders) trafficbound sandstone 3.039 mi., Lick Fork-Bonanza Rd., RS 58-897, Johnson Co.;

Ky.—**Henderson Hite Constr. Co.**, P. O. Box 54, Bardstown, Ky., LB $74,201. trafficbound 3.727 mi. Hawesville Rd., RS 92-354, Ohio Co.;

Ky.—**Kentucky & Tennessee Paving Corp.**, 105 Central St., Harlan, Ky., LB $75,521 (2 bidders), b. conc. surf. 9.3 mi. various roads, RS Group 69 (1958), Harlan Co.;

Ky.—**Ralph Rogers & Co.**, P.O. Box 79, Bloomington, Ind., LB $183,403 (4 bidders) b. conc. surf. 25.507 mi. various roads, SP Group 59 (1958) Hopkins and Webster Counties;

Ky.—**State Constr. & Stone Co., Inc.**, Hartford, Ky., LB $118,486 (2 bidders) b. conc. surf. 16.161 mi. various roads, SP Group 60 (1958) Hancock and Hardin Counties;

Ky.—**Ward Montgomery & Marinn Contr. Co.**, Lebanon, Ky., LB $111,074 (2 bidders) bit. surf. 8.072 mi. various roads, RS Group 78 (1958) Adair, Green and Taylor Counties;

Ky.—**Waters Constr. Co.**, 205-B S. Mulberry St., Elizabethtown, Ky., LB $145,809 (2 bidders) b. conc. surf. 22.257 mi. various roads, SP Group 68 (1958) Casey and Lincoln Counties;

Ky.—**Talbott Constr. Co.**, 30 Wall St., Winchester, Ky., LB $2,959,262 (7 bidders) grading, draining 5 structures (div. lanes) interstate, I-64-5 (5) 93, Clark Co.;

Ky.—**Foster & Creighton Co.**, 724 First American National Bank Bldg., Nashville 3, Tenn., LB $530,959 (3 bidders) c. conc. paving in Albany DF-161 (4), DF 199 (11), DS 212 (20) Clinton Co.;

Ky.—**Ralph E. Mills Co.**, 410 Ann St., Frankfort, Ky., LB $790,876 (5 bidders) high type surf. (div. lanes) 1.533 mi. DF 551 (3) Franklin Co.;

Ky.—**Middle West Roads Co.**, P.O. Box 51, Louisville 13, Ky., LB $226,624 (1 bidder) b. conc. surf. 31.95 mi. various roads, SP Group 48 (1958), Calloway, Marshall, Lyon and Crittenden Counties;

Ky.—cancelled bids to have been opened Aug. 8, bit. surf. 2.1 mi. Harlan-Virginia State Line Rd., RS 48-48, Harlan Co.; SP Group 58 (1958), Nelson and Bullitt Counties; SP Group 59 (1958), Jefferson and Oldham Counties; b. conc. surf. 7.858 mi. Warsaw-Owenton Rd., RS-59-73, Gallatin Co.; received no bids Aug. 8, bit. road mix surf. 1.2 mi. The Mildred Road, RS 55-529, Jackson Co.; bit. road mix surf. 27.55 mi. various roads, RS Group 65 (1958), Edmonson and Warren Counties; bit. conc. surf. 11.564 mi. SP Group 62 (1958) Simpson Co. CD 7/23 and 7/25.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort,

Foster & Creighton Co., 724 First American National Bank Bldg., Nashville 3, Tenn., CA $3,738,766 (7 bidders) c. conc. paving, interchange and railroad overpass, 10.002 mi. S-SG-155 (1), Franklin and Woodford Counties. Bids Aug. 8. CD 7/21.

Diehl Pump & Supply Co., Robards Lane, Louisville, Ky. LB $327,450, Contr. A, sanitary sewerage sys., lift stations, CUMBERLAND, KY., City, City Hall, Cumberland, Ky. Bids Aug. 8. CD 7/28;

Acqua Pike, Inc., Robards Lane, Louisville, Ky. LB $137,620, Contr. B, sewage treatment plant, (Cumberland, Ky.).

City, City Hall, Sweetwater, Tenn., rejected bids July 19, sewage treatment plant, intercepting sewer plant equip., SWEETWATER, TENN. LB $507,025. CD 8/8, under LB.

BUILDINGS—LB & CA

▲ **J. E. Morton, Inc.**, Aiken, S. C. CA $1,000,000. 80 unit MOTOR HOTEL, CHARLESTON, S. C. Mrs. Hollis A. Ayers, 16 Meeting St., Charleston, S. C. A. E. Constantine, 139 Calhoun St., Charleston, S. C., archt.

Robert L. Turchin, Inc., 1835 Purdy Ave., Miami Beach, Fla., CA $800,000. APARTMENT HOTEL, 41 St. and Pine Tree Dr., MIAMI BEACH, FLA., Saluda, Inc., c/o General Contractor. CD 6/3.

Liles, McElvy & Rutland, 2828 W. Edgemont Ave., Montgomery, Ala. Owner Builds. $900,000: 100 HOMES for Negroes in Westlawn Subdivision, DECATUR, ALA.

Ajax Realty Co., Dothan, Ala. Owner Builds. $750,000. 2 WAREHOUSES 20,000 and 25,000 sq. ft. and 50,000 sq. ft. pre-fab. PLANT Industrial Park, DOTHAN, ALA.

Girdler Catalysts, 2820 W. Broadway, Louisville, Ky. rejected bids July 1, ADMINISTRATION and LABORATORY RESEARCH BLDG., Crittenden Dr., LOUISVILLE, KY. $700,000. Will re-advertise after Oct. 1. CD 7/7.

Whittenberg Constr. Co., 2214 S. Floyd St., Louisville 8, Ky., CA $875,000 (6 bidders), general contract DEPARTMENT STORE, and parking space, ST. MATTHEWS, KY., Sears Roebuck Co., S. State and Van Buren, Chicago, Ill. Bids July 29, awarded Aug. 7. CD 7/9.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
August 26 Indiana
STREETS AND ROADS
August 26 Indiana

▲ Ill., Chicago—BA 8/28—Metropolitan Sanitary Dist., of Chicago, 100 E. Erie St., constr. East Chicago Heights Sewage Treatment Plant and pumping station, primary and filter tanks, digester, Joe Orr Rd. and Woodlawn St., Bloom Township, $500,000; North Side Sewage Treatment Wks. rehab. aeration tanks, diffusion sys., concrete work, concrete coating, Skokie $500,000. CD 3/4.

BUILDINGS—BA

Mich., Saginaw—HOSPITAL—BA 8/28—Saginaw Osteopathic Hospital, Bd. Trustees, 515 N. Michigan St., 4 story hospital addn., Madison, Monroe and North Fayette Sts., $950,000. Plans deposit $25. Frederick E. Wigen & Assocs., Inc., 507 Weschmann Bldg., archt. CD 12/7/56.

BUILDINGS—SLC

Ill., Orland Park—PLANT, etc.—Andrews Corp., 10500 W. 153 St., soon lets contract, 1 and 2 story, 115,000 sq. ft. mfg. plant addn. and office bldg. $900,000. Anderson & Novak, 6618 W. Diversey Ave., Chicago, archts. Bids rejected May 5. CD 5/1.

O., Findlay—HOME FOR AGED—Church of God, Findlay, soon lets contract, Home for Aged, $600,000. Sullivan, Isaacs, Sullivan, 1800 Reading Rd., Reading, archts.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—Ohio Dpt. Hys., Columbus 15,

O.—DeSalvo Constr. Co. & S. A. Ruble Co., 3701 Red Bank St., Cincinnati, O., CA $4,816,400, est. $5,072,700, constr. 4.95 mi. Cincinnati-Dayton Freeway from Kyles Station Rd. in Butler Co. to just north of Bigler Rd. in Warren Co. incl. 10 bridges, and interchange with State Route 63 and two roadside rests, Butler and Warren Counties;

O.—Schoen Asphalt Paving, Inc., 310 S. Westwood St., Toledo, O. CA $1,174,206, est. $1,376,500. constr. relocated U.S. 23 nine-tenths mile from the Michigan State line to point just north of Ten Mile Creek in village of Sylvania. This 1.5 mi. project includes work on adjoining roads and constr. of modified cloverleaf interchange at the intersection with Monroe St., Lucas Co. Bids July 22. CD 7/29, under LB.

Whiting-Turner Contg. Co., Patapsco Tunnel, Baltimore, Md., LB $301,920 (5 bidders) southern portion of Center St. Bridge, Spans 1 thru 13, YOUNGSTOWN, O. Comrs. Mahoning Co. Co. Court House, Youngstown, O. Bids July 31. CD 7/21.

▲ **INDIANA**—State Hy. Dpt., John Peters, chn., State House Annex, Indianapolis,

Ind.—Calumet Paving Co., Zionsville, Ind., CA $2,949,135, est. $3,521,083, c. conc. 7.096 mi. US 421, Proj. I-05-3 (18), Contr. R-4399, Shelby Co.;

Ind.—J. C. O'Connor & Sons, Inc., 2104 Miner St., Fort Wayne, Ind., CA $2,370,533, est. $2,497,944, c. conc. pavement, rein.-con. girder structure 6.57 mi. US 30, Proj. F-77 (21, 22), Contr. R-4401, LaPorte and Stark Counties. Bids Apr. 29. CD 5/8, under LB.

▲ **INDIANA**—State Hy. Comm., John Peters, chn., State House Annex, Indianapolis, Zone 4,

Ind.—McMahan Constr. Co., Rochester, Ind., CA $1,025,434, bit. pavement with aggr. base 10.961 mi. SR 110 and 17, Proj. S-20 (2) S-348 (3), 7-25-58, Contr. R-4460, Fulton and Marshall Counties;

Ind.—Dyer Constr. Co., 1716 Sheffield Ave., Dyer, Ind. CA $546,909, est. $563,249, bit. pavement with aggr. base 3.949 mi. SR 145, Proj. S-17 (3), Contr. 4400, LaPorte Co. Bids June 25. CD 7/2, under LB.

INDIANA—State Hy. Comm., John Peters, chn., State House Annex, Indianapolis,

R. L. Schutt Co., Inc., 611 N. Park Ave., Indianapolis, Ind., CA $405,944, est. $468,469. 5 continuous steel beam and rein.-con. girder spans over Silver Creek N. of State Road 131, Proj. I-03-1(6), Contr. 4336, Clark Co. Bids Mar. 25, CD 4/1, under LB.

INDIANA—State Hy. Comm., John Peters, chn., State House Annex, Indianapolis,

G. H. Allen, Vincennes, Ind., CA $125,264, est. $145,955. 4 continuous steel beam and rein.-con. girder spans over Interstate Rte. 03, US Rd. 31 on County Road S. of US Rd. 50, Proj. I-03-2(9), Contr. 4414, Jackson Co. Bids May 27. CD 5/6.

▲ **Chas. H. Shook, Inc.**, 582 E. 2 St., Dayton, O., CA $1,212,750. (13 bidders), Contr. A, 1 story, brick, rein.-con., concrete sewage treatment plant, SHELBYVILLE, IND., City, City Hall, Shelbyville, Ind. Bids July 29 CD 8/5, under LB.

Vogel Constr. Co., Inc., 3760 E. St. Clair St., Indianapolis, Ind., CA $516,878. (8 bidders), Contr. B, sanitary sewer extensions, (Shelbyville, Ind.).

▲ **ILLINOIS**—Dpt. P. Wks. & Bldg., Div. Hys., Centennial Bldg., Springfield,

Ill.—Fred Weber, Contractor, 7929 Alabama St., St. Louis, Mo., and **St. Louis County Bridge & Grading Co.**, 7929 Alabama Ave., St. Louis, Mo., LB $1,917,957. c. conc. 4.28 mi., 4 conc. paved ramps, reconstr. Ill. Rt. 13 and U.S. 460, southwest of Belleville, Rock Island Co.;

Ill.—John Doherty Co., E. 79 and S. Clyde Sts., Chicago, Ill., LB $245,134, storm sewers, drainage structures 0.71 mi. Harlem Ave. (Ill. Rte. 42S) in Worth and Palos Twps., Cook Co.;

Ill.—received no bids July 29, concrete base course wid'n., b. conc. resurf. 9.33 mi. from Alhambra, Madison and Bond Counties. CD 7/17.

John Doherty Co., 9824 S. Genoa, Chicago, Ill. CA $119,000, pumping station, RIVERDALE, ILL. Village, Village Hall, Riverdale, Ill. Awarded Aug. 1. (Correction—contractor). CD 6/11, under CA.

▲† **Eugene Luhr & Co.**, Box 48, Columbia, Ill., CA $1,437,640. timber piling dikes and stone fill dikes, Mississippi River Miles 35 to 43 and 132 to 135 CIVENG-23-065-58-64 Scott and Ste. Genevieve Counties, Mo. and Alexander and Randolph Counties, Ill., ILLINOIS and MISSOURI. U. S. Eng., 420 Locust St. St. Louis 2, Mo. Bids June 26, awarded Aug. 4. CD 7/7, under LB.

▲ **WISCONSIN** — State Hy. Comm., State Office Bldg, Madison, Bids opened 8/12,

Wis.—Edward Kraemer & Sons, Plain, Wis., LB $619,804 (10 bidders), base and b. conc. pave. 15.958 mi. Abrams-North County Line Road, U. S. Hy. 141, Contr. 1, Proj. DF 040-1(20), Oconto Co.; LB $93,457 (8 bidders), base course 4.303 mi. Hudson-Eau Claire (S. T. H. 65-Woodville Section) Road, Interstate Hy. 94, Contr. 2, Proj. I-94-1(24)9, St. Croix Co.;

Wis.—H. Turner & Son, Boscobel, Wis., LB $485,752 (9 bidders), grade, subbase and Structures B-17-21 and C-17-12-15, 4.994 mi. S. T. H. 60-Mount Zion Road, U. S. Hy. 60, Contr. 1, Proj. DF 08-1(21), Crawford Co.;

Wis.—P. C. Kaiser, Portage, Wis., LB $401,415 (9 bidders), grade, subbase and Structure C-17-4, 5.158 mi. Hudson-Eau Claire (Red Cedar River-Rusk Section) Road, Interstate Hy. 94, Contr. 1, Proj. I-94-1(21)43, Dunn Co.;

Wis.—Ben Ruesch, Medford, Wis., LB $133,108, (11 bidders), grade, subbase and Structure C-47-39, 2.959 mi. S. T. H. 183-Rock Elm Road, S. T. Hy. 72, Contr. 1, Proj. DS 075(8), Pierce Co.;

Wis.—Schuette Builders, 3901 Custer St., Manitowoc, Wis., LB $860,634 (6 bidders), grade, base and c. conc. 3.208 mi. Oshkosh-Neenah (S. T. H. 110-

U. S. H. 45 Section) Road, U. S. Hy. 41, Contr. 1, Proj. F 03-2(43), Winnebago Co.;

Wis.—**Ivey Constr. Co.,** Mineral Point, Wis., LB **$247,950** (8 bidders), cement stabilized base and b. conc. 8.931 mi. Monroe-Monticello Road, S. T. Hy. 69, Contr. 1, Proj. T 032-1(9), Green Co.;

Wis.—**Payne & Dolan of Wisconsin,** 735 N. Water St., Milwaukee, Wis., LB **$100,445** (4 bidders), b. conc. 4.275 mi. Goerke's Corners-East County Line Road, U. S. Hys. 16 and 18 and S. T. Hy. 30, Contr. 1, Proj. F 016-1(31), Waukesha Co.;

Wis.—**W. R. DuBois & Son,** Baraboo, Wis., LB **$93,179** (8 bidders), base course 6.644 mi. South County Line-Packwaukee Road, U. S. Hy. 51 Contr. 1, Proj. DF 05-2(26), Marquette Co.;

Wis.—**Baumgardt Constr. Co.,** Dodgeville, Wis., LB **$110,014** (10 bidders), base course 5.165 mi. Hudson-Eau Claire (S. T. H. 65-Woodville Section) Road, Interstate Hy. 94, Contr. 1, Proj. I-94-1(24)9, St. Croix Co.;

Wis.—**Arthur Overgaard Co., Inc.,** Boscobel, Wis., LB **$92,095** (10 bidders), base course 4.32 mi. Hudson-Eau Claire (S. T. H. 65-Woodville Section) Road, Interstate Hy. 94, Contr. 3, Proj. I-94-1(24)9, St. Croix Co. CD 7/25.

BUILDINGS—LB & CA

▲ **Freeman Constr. Co.** R. D. 3, Wooster, O., CA **$1,414,000** general contract, two women's DORMITORIES, Kent State University, KENT, O. Ohio Dpt. P. Wks., State Dpt. Bldg., Columbus, O. Bids July 30. CD 8/1, under LB.

▲ **Fred W. Entenman, Inc.,** 3323 Secor Rd., Toledo, O., CA **$1,620,000.** APARTMENT COMMUNITY for retired persons, 85-acre site, 5330 Harroun Rd., SYLVANIA, O. Crestview of Ohio, Inc., c/o Flower Hospital, Cherry St., Toledo, O. Bids Apr. 15, awarded Aug. 5. CD 4/30, under LB.

W. W. Spurling Constr., Inc., 2606 Sunnymede Dr., Fort Wayne, Ind., CA Est. **$450,000,** general contract, LODGE, 2520 Broadway, FORT WAYNE, IND. Eagles Lodge No. 248, F. O. E., 522 W. Main St., Fort Wayne, Ind., Awarded July 30.

Civilian Bldg. & Supply, Inc., 1405 N. Clinton St., Fort Wayne, Ind., CA **$545,625,** (Total all bids) general contract, air-conditioned OFFICE BLDG., Rte. 30 Bypass, east of Kirkwood Park, FORT WAYNE, IND., Brotherhood Mutual Life Insurance Co., 230 E. Berry St., Fort Wayne, Ind. Awarded Aug. 1, Orus Eash, Covington Rd., Fort Wayne, Ind., archt. CD 6/7/56.

B. Pehoski, 6370 N. Green Bay Ave., Milwaukee, Wis., CA Est. **$500,000,** 2 story, 62 x 541 ft. CHURCH and SCHOOL, MILWAUKEE, WIS. St. Roman's Catholic Cong., 4238 S. 20 St., Milwaukee, Wis. S. A. Rypel, 1401 W. Oklahoma Ave., Milwaukee, Wis., archt.

Allied Constr. Co., 120 S. La Salle, Chicago, Zone 3, Ill., CA **$500,000.** 2 story, 31 x 175 ft. brick, alum. curt wall, air-conditioned HOTEL top addn. CHICAGO, ILL. Harrison Restaurant Co., 540 S. Michigan, Chicago 5, Ill. Camburas & Theodore, 105 W. Madison, Chicago 2, Ill., archts. Awarded Aug. 7.

Contractors & Builders, Inc., 228 N. La Salle, Chicago, Zone 1, Ill. CA **$920,000.** 125 x 180 ft. STORE, 7500-60 N. Western, CHICAGO, ILL. Howard-Western Properties, Inc., 228 N. La Salle, Chicago, Ill. Sidney H. Morris & Assoc., 134 N. La Salle, Chicago 2, Ill., archts. Awarded July 26. CD 8/1/57.

▲ **The Griscom-Russell Co.,** 225 Wetmore St. S.E. Massillion, O., CA **$1,375,000.** steam generator equip. for Enrico Fermi Atomic POWER PLANT, near Monroe, DETROIT, MICH. Power Reactor Development Corp., c/o Detroit Edison Co., 2000 2nd Ave., Detroit, Mich.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTING
BRIDGES
August 27 South Dakota
STREETS AND ROADS
August 26 Colorado August 27 South Dakota
August 29 North Dakota

BUILDINGS—BA

Minn., St. Paul—SCHOOL—BA 8-28—Bd. Educ., 1900 West County Road F, New Brighton, Red Oaks School addn. $450,000. Fasth, Hillstrom & Horty, 910 Midland Bank Bldg., Minneapolis, archts. CD 4/23.

▲ **Mo., Jefferson Barracks (St. Louis 23 P. O.)**—HOUSING—BA 9/9—Housing Auth. of St. Louis County, 7740 Forsyth Blvd., Clayton, Zone 5, 288 dwelling units and management and maintenance bldg., site of Proj. Mo.-4-1, $3,000,000. Plans deposit $50. Leo A. Daly Co., 3207 Olive St., St. Louis, Zone 3, archts. CD 6/4, under LB.

▲ **Mo., Cape Girardeau**—DORMITORY—BA 9/11—Southeast Missouri State College, Bd. Regents, Cape Girardeau, womens dormitory and dining facilities. $1,400,000. Buchmueller, Whitworth & Assocs., Architects and Engineers, 1 Peachtree Lane, Sikeston, archt. CD 1/10/58.

HEAVY CONSTRUCTION—LB & CA

▲ **Johnson, Drake & Piper, Inc.,** Baker Bldg., Minneapolis, Minn., LB **$1,570,505** (10 bidders) transit shed and warehouse, DULUTH, MINN. Seaway Port Auth. of Duluth, 909 Alworth Bldg., Duluth, Minn. Bids Aug. 12. CD 7/24.

J. V. Gleason, 2701 Louisiana Ave., Minneapolis 26, Minn., LB **$481,286** (4 bidders) grav. base road mix bit. surf. plant mix bit. surf. bit. seal coat 7.4 mi. near Loretto and 0.7 mi. south of Spurzem Creek, MINNEAPOLIS, MINN. Hennepin Co., Court House, Minneapolis, Minn. Bids Aug. 12. CD 7/23.

▲ **Forcum-Lannom, Inc.,** Dyersburg, Tenn. CA **$1,844,900.** Contr. No. 1, sewage treatment plant SE of Adams Field between Arkansas River levee and Fourche Dam Pike with auxiliaries and appurtenance, etc., LITTLE ROCK, ARK. Little Rock Sanitary Sewer Comm., City Hall, Little Rock, Ark. Bids July 16, awarded Aug. 5. CD 7/22, under LB.

NEBRASKA—State Dpt. Rds. & Irrigation, Lincoln. Bids opened 8/7.

Neb.—**Parsons Constr. Co.,** 2512 Deer Park Blvd. Omaha, Neb. LB **$119,840,** culverts 1.4 mi. Lincoln Omaha Rd., Proj. 280-9 (7), Douglas Co.;

Neb.—**Peter Kiewit Sons' Co.,** 1024 City National Bank Bldg., Omaha, Neb. LB **$179,457,** bridge 1.4 mi. Lincoln Omaha Rd. near Millard, Proj. I-80-9 (7) Douglas Co.;

Neb.—**Capital Bridge Co.,** 1001 N. 9th St., Lincoln Neb. LB **$87,025,** bridge, guard rail 9 mi. Spencer-North Rd., Proj. DF-502 (2) Boyd Co.;

Neb.—**Jensen Bros., Jensen Constr. Co. & United Contractors,** 1901 Eastern Blvd., Des Moines, Iowa. LB **$662,025,** bridge Plattsmouth-Omaha Rd. near Oreapolis. Proj. DF-138 (23) Cass and Sarpy Counties. CD 7/30.

▲ **NEBRASKA**—State Dpt. Rds. & Irrigation, Lincoln. Bids opened 8/7.

Neb.—**Arnold Swanson Co.,** Hastings, Neb. LB **$192,969.** b. conc. surf. course 6.8 mi. Lincoln-Beatrice Rd., Gage Co. Proj. DF 18 (9);

Neb.—**Missouri Valley Constr. Co.,** W 2 St., Grand Island, Neb. LB **$83,593,** pavement, culverts, bridge, guard rail b. conc. surf. course 2 mi. North Platte-Maywood Rd., Proj. SF-75003 Lincoln Co.;

Neb.—**C. W. Petit Constr. Co.,** 2216 Isabella St., South Sioux City, Neb. LB **$93,195,** grading, detour 9 mi. Spencer North, Proj. DF 502 (2), Boyd Co.;

Neb.—**Roberts Constr. Co.,** 1018 Trust Bldg., Lincoln, Neb. LB **$373,050,** grading 1.4 mi. Lincoln Omaha Rd., Proj. I-80-9 (7) Douglas Co.;

Neb.—**Dobson & Robinson, Inc.,** 823 1st National Bank Bldg. Lincoln, Neb. LB **$124,408,** grading, pavement, culverts 2.2 mi. Hooper-Winslow Rd., Proj. S-786 (1) Dodge Co.;

Neb.—**Blacktop, Inc.,** 523 1st National Bank, Bank Bldg., Fremont, Neb. LB **$112,826,** detour, guard rail subgrade reconstr. granular fill and shoulder constr. armor coat bit. sand surf. course 5.1 mi. Burwell Atkinson Rd. Proj. DS-132 (6) Garfield Co.;

Neb.—**Abel Constr. Co.,** 1815 Y St., Lincoln, Neb. LB **$299,163,** b. conc. surf. course 10 mi. Lincoln-Eagle Rd., Proj. DF-133 (22) Lancaster and Cass Counties;

Neb.—**Nichols Constr. Co.,** Geneva, Neb. LB **$279,690,** granular subbase course and soil-aggreg. base course, b. conc. surf. course 6.2 mi., Geneva-Milligan Rd. Proj. DS-185 (2) Fillmore Co.;

Neb.—**Capital Bridge Co.,** 1001 N. 9th St., Lincoln, Neb. LB **$548,612,** pavement, culverts, viaducts 0.4 mi. Lincoln-Omaha Rd. near Waverly Proj. IN-ING-80-9 (17), Lancaster Co. CD 7/30.

† **McCarthy Imprvt. Co.,** 602 Kahl Bldg., Davenport, Iowa, LB **$979,708,** est. $888,145, levees, channel and appurtenances, Stage 1 levees and floodwalls on Maris de Cygnes R., CIVENG-23-028-59-1, Ottawa, KANSAS, U. S. Eng., 1800 Federal Office Bldg., 911 Walnut St., Kansas City, Mo. Bids 8/7. CD 7/17.

BUILDINGS—LB & CA

Bishop Constr. Co., 3314 Roanoke St., Kansas City, Mo. LB **$336,481.** 1 story, part bsmnt., 149x237 ft. Bluejacket SCHOOL, SHAWNEE, KAN. Common School Dist. No. 27, 11310 Johnson Dr., Shawnee, Kan. Bids 8/7. CD 3/17.

Warner Constr. Co., Holcombe-Blanton Bldg., San Angelo, Tex. LB **$624,721** (14 bidders), constr. SCIENCE BLDG., Job No. 200, ALPINE, TEX. Sul Ross State College, Alpine, Tex. Bids Aug. 6. CD 7/28.

A. C. Fitzgerald, 2106 Brackenridge, Austin, Tex. LB **$763,300.** general contr. 2 story, bsmnt. CHURCH BLDG. OFFICES, EDUCATIONAL FACILITIES, GYM and FELLOWSHIP HALL, AUSTIN, TEX. St. Martins' Evangelical Lutheran Church, 14th and Congress Sts., Austin, Tex. Bids Aug. 11. CD 7/24.

▲ **Alex Sharp, Builder,** 7002 Forest Lane, Dallas, Tex. Owner Builds. **$360,175,** 27 DWELLNGS; **$391,000,** 33 brick DWELLINGS; **$378,500,** 31 brick DWELLINGS, Santa Rosa Heights No. 3 Subdivision, CARROLLTON, TEX. Grand total $1,129,675. CD 8/1.

General Housing Co. of Texas, 1315 Cadiz, Dallas, Tex. Owner Builds. **$352,000.** 32 DWELLINGS, Valwood Park, DALLAS, TEX. CD 8/1.

O'Rourke Constr. Co., 1001 W. Commerce St., Dallas, Tex. CA **$738,000.** PLANT addn., GARLAND, TEX. Temco Aircraft Corp., Garland, Tex. CD 8/12, under LB.

Sheridan Realty Co. & Crowder Development Co., 8008 Howard Dr., Houston, Tex. Owner Builds. **$368,500.** 20 DWELLINGS in Timbergrove Manor Subdivision, HOUSTON, TEX. CD 8/12.

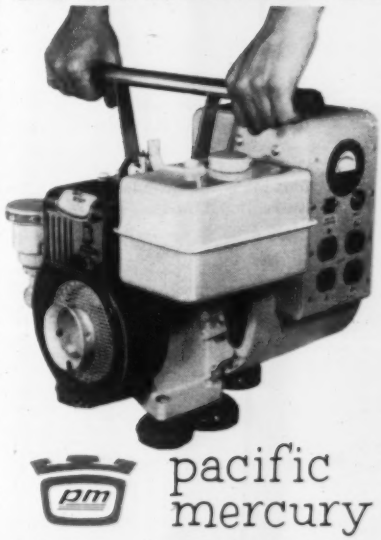
Hodell & Co., Tower Pet. Bldg., Dallas, Tex. Force Account. **$363,125.** 36 DWELLINGS in South Center Hills, IRVING, TEX. CD 8/11.

Danna Constr. Co., 4922 Greenville, Dallas, Tex. Owner Builds. **$356,225.** 28 DWELLINGS, RICHARDSON, TEX.

Inland Homes, Inc., Fred Novak, Sr., 602 Verne St., San Antonio, Tex. Owner Builds. **$348,000,** 29 DWELLNGS; **$375,000,** 25 DWELLINGS, Upson Heights Subdivision, SAN ANTONIO, TEX. CD 8/1.

(Continued on page 128)

NEW and OUTSTANDING!



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Carryable—Portable—Stand-by Electric Plants

1 KW to 315 KW Capacity

Thoroughly job-tested, the new **Pacific Mercury** line offers generator sets for every need. Each has been designed to meet the requirements of contractors and embodies many features not found on sets of comparable cost.

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- Built-in RPM meter
- Triple-dipped mildew and fungus-proofed windings
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- Remote start stop receptacle
- Built-in electric starter
- Trickle charger
- 4-Cycle engines
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14052 BURBANK BLVD., VAN NUYS, CALIF.

Company field engineers in principal areas
Manufacturers of the Thomas Electronic Organ

Jot down your name, address and company here and mail for complete catalog information and prices.

This easy handling Travel-Crew Cab model carries six men in all-weather comfort to the job site. It's rated up to 25,500 lbs. GVW. Plenty of leg room fore and aft. Seats measure over five feet wide. Third door means easier access to rear. Cab and chassis are warranted *work-ready* . . . for one, low *complete unit* price. Six-cylinder engine economy in compact-design or conventional models. Tandem-axle models to 33,000 lbs. GVW.

Bonus loadspace pickup bodies up to 8½ feet long "hotshot" all-purpose loads. Floor and side-walls of all-steel construction add unit tightness and longer life. Three men ride in comfort—seat is over five feet wide. More forward vision with the biggest distortion-free windshield in its class. Add to this an economical "six," more usable horsepower, high torque at low rpm.—and, component for component, you'll get a better buy!

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Money-saving ways to move machines...materials...men!

Rugged INTERNATIONAL V-8 trucks
engineered by truck specialists for extra-heavy-duty work.

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that haul six-man crews and full-sized loads.

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that give you more "go" with traditional six-cylinder engine economy.

INTERNATIONAL **V-8 trucks** continue to bring you the newest in heavy-duty power and economy! Engines are specially matched to drive lines to pull *your* load on *your* operation at lowest cost. Metered-flow engine water jacket design evens engine temperatures. All-truck pistons and rings reduce oil consumption. Finish-honed replaceable exhaust valve guides and self-aligning tappets mean reduced down-time. The result? A dependable truck that gets the job done on schedule at *least* cost. Ratings to 65,000 lbs. GCW. See your INTERNATIONAL Truck Dealer for more information.

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INTERNATIONAL HARVESTER COMPANY, CHICAGO
Motor Trucks • Crawler Tractors
Construction Equipment • McCormick®
Farm Equipment and Farmall® Tractors

(Continued from page 125)

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
September 10, 11 California
STREETS AND ROADS
September 10, 11, 17 California

BUILDINGS—BA

▲ **Calif., Torrance**—SCHOOL—BA 9/5—Torrance Unif. School Dist., constr. 3rd increment addn. to South High School. $1,600,000. CD 7/14, under LB.

▲ **Calif., Los Angeles**—INSTRUCTION BLDG., etc.—BA 9/11—University of Southern California, 3551 University Ave., (selected list of bidders), 6 story, rein.-con. instruction bldg. and research laboratory for University of Southern California School of Medicine. $1,500,000. Flewelling & Moody, 766 Colorado Blvd., archts. CD 6/5/50.

Utah, Salt Lake City—OFFICE—BA 10/15—Irwin C. Glaser, 63 S. 4th St., 4 story, 51,500 sq. ft. brick, porcelainized steel office bldg., 231 E. 4th St. $700,000. Scott & Beecher, Dooly Bldg., archts.

HEAVY CONSTRUCTION—LB & CA

† **UTAH**—Bureau P. Rds., Room 202, U. S. Govt. Office, 1750 S. Redwood Rd., Salt Lake City, Bids opened 8/4,

Strong Co., Springville, Utah. LB $762,847. Forest Hy. Proj. 34-11 Provo River Haydens Fork for 7.593 mi., Summit and Duchesne Counties. CD 4/6/56.

▲ **ARIZONA**—State Hy. Dpt., 206 S. 17th Ave., Phoenix, Ariz.—**Mohamed Earthmoving Co.**, 2620 S. 24th St., Phoenix, Ariz. LB $339,119. grade, etc. 2 mi. Grant Lincoln Sts. in city of Phoenix, Maricopa Co.;

Ariz.—**L. M. White**, Box 6008, Prescott, Ariz. LB $576,820. grade, drain, etc. 7.9 mi. U. S. 70 Globe-Lordsburg Hy., Graham Co.;

Ariz.—**Cyr & Evans**, Box 206, Tempe, Ariz. LB $346,665. reconstr. 3 mi. U. S. 80 Benson-Douglas Hy., Cochise Co. CD 7/31/57.

▲ **NEVADA**—State Hy. Dpt., State Hy. Bldg., Carson City,

Nev.—**Wells-Stewart Constr. Co., Inc.**, Las Vegas, Nev. CA $1,144,178. (9 bidders) portion primary hy. sys. 15.293 mi. U. S. Hy. 93 between Caliente and 1.8 mi. north of jct. with S.R. 25 near Panaca, Rte. section 007-3, Control Sections LI-05 and LI-06, Proj. No. F-007-3 (6) State Hy. Contr. No. 1038, Lincoln Co.;

Nev.—**Isbell Constr. Co.**, S. Virginia Rd., Reno, Nev. CA $157,307. (1 bidder) portion primary hy. sys. 0.313 mi. F.A. Rte. 9 Kietzke Lane between 400 ft. south and 1200 ft. north of east 2nd St. intersection Rte. section 009-1, Control Sections WA-08 and WA-25 Proj. F-009-1 (3) State Hy. Contr. No. 1037, Washoe Co. Bids Aug. 7, awarded Aug. 8. CD 7/28.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,

Madonna Constr. Co., P. O. Box 910, San Luis Obispo, Calif. CA $1,085,577. grading, surf. to constr. 3.1 mi. 4 lane expressway and 2.5 mi. 2 lane hy. State Sign Rte. 1 between ½ mi. west of Pennington Creek and Morro Bay and constr. bridge over Baywood Park Rd. V-SLO-56-D San Luis Obispo Co. Bids July 30. CD 8/4, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,

McCammon-Wunderlich Co. & Wunderlich Contg. Co., P. O. Box 359, Palo Alto, Calif. CA $4,140,558. grading, paving 3.7 mi. 4 lane freeway U. S. 99 from 1 mi. south of Shasta-Siskiyou Co. line to Sacramento River Bridge in Dunsmuir, incl. 6 bridges. II-Sha-Sis-3. D. A. DMR Shasta and Siskiyou Counties. Bids July 30. CD 8/1, under LB.

Glanville Plumbing Co., 215 Shant St., Oceanside, Calif. LB $641,879. (4 bidders) water mains, appurtenances, (cement mortar lined and coated steel water mains and appurtenances) Spec. 735, near Richmond, OAKLAND, CALIF. East Bay Municipal Utility Dist., c/o Secy., 2130 Adeline St., Oakland, Calif. CD 6/9;

Peletz Constr. Co., 475 W. College Ave., Santa Rosa, Calif. LB $51,302. (10 bidders) water mains, appurtenances Acalanes Rd. to St. Stephens Dr. near Orinda Spec. 741 (Oakland, Calif.)

BUILDINGS—LB & CA

▲ **Paulsen Constr. Co.**, 1425 Jefferson St., Salt Lake City, Utah, CA $1,358,160. men's RESIDENCE HALL "G and H", ground imprvs., outside utilities of men's residence halls, Brigham Young University, PROVO, UTAH. Brigham Young University, University Hill, Provo, Utah. Bids July 15. CD 7/23, under LB.

M & O Constr. Co., 5812 S. Adams St., Tacoma, Wash., CA $674,629, general contract 4 rein.-con. and masonry bldgs. totaling 79,581 sq. ft. for Iva Alice Mann JUNIOR HIGH SCHOOL, TACOMA, WASH. School Dist. 400, 5214 Steilacoom Blvd., Tacoma, Wash. Bids July 17, awarded Aug. 7. CD 7/24, under LB.

▲ **Stolte Inc.**, 8451 San Leandro St., Oakland 21, Calif. LB $2,119,000, constr. 2 story U shaped BIOLOGICAL SCIENCES BLDG. to house teaching and research facilities for botany and entomology dpts. at University of California, Davis Campus, DAVIS, CALIF. University of California, Architects & Engineers Office, Davis, Calif. Bids Aug. 7. CD 7/29.

C. W. Devore, Box 37, Garden Grove, Calif. LB $448,999 (12 bidders) frame, stucco Newport Beach Elementary SCHOOL No. 6, NEWPORT BEACH, CALIF. Newport Beach School Dist., 2000 Cliff Dr., Newport Beach, Calif. Pieger, Blurock, Hougan & Ellerbroek & Hodgdon, 2515 E. Coast Hy., Corona del Mar, Calif., archts. CD 5/25/54.

▲ **Stolte Inc. and M&K Corp.**, 8451 San Leandro St., Oakland, Calif. LB $1,388,900 (3 bidders) 8 story OFFICE and 1 story BLDG. with bsmnt. and roof structures about 200,000 sq. ft. floor area for State Dpt. Finance, W.O. 3848-GC-2, OAKLAND, CALIF. State Div. Architecture, 1120 N. St., Sacramento, Calif. Bids Aug. 12. CD 7/3.

Dale Benz, Inc., 1912 Grant St., Phoenix, Ariz. CA $905,110, four 20,500 sq. ft. MOTEL BLDGS., 950 W. Camino del Rio, SAN DIEGO, CALIF. Camino del Rio, Inc., 950 W. Camino del Rio, San Diego, Calif. CD 7/30, under LB.

Ralph H. Koch & Frank Wallach, 9273 Dorrington Place, Pacoima, Calif. Owner Builds. $539,700. 39 stucco DWELLINGS, 8800 block Noble, Lemona and Norwich Aves. and Raven St., SAN FERNANDO, CALIF.

▲ **Swinerton & Walberg Constr. Co.**, 200 Bush St., San Francisco, Calif. CA Total cost $10,000,000. general constr. 15 story OFFICE BLDG., SAN FRANCISCO, CALIF. Bethlehem Pacific Coast Steel Corp., 20th and Illinois St., San Francisco, Calif. Bids Aug. 1. CD 7/2.

▲ **Carl N. Swenson Co., Inc.**, 1095 Stockton Ave., San Jose, Calif. CA $1,572,000, general contract 4 story, rein.-con. HEALTH BLDG. with penthouse and 3 story, 85,800 sq. ft. rein.-con., FINE ARTS BLDG. at San Jose State College, W.O. 4005GC-39 and W.O. 4005GC-30, SAN JOSE, CALIF. State Div. Architecture, 1120 N. St., Sacramento, Calif. Bids Aug. 5, awarded Aug. 8. CD 8/8, under LB.

▲ **Barnhart Constr. Co.**, P. O. Box 127, Santa Clara, Calif. LB $1,215,915 (4 bidders) concrete block HIGH SCHOOL, Morro Bay, SAN LUIS OBISPO, CALIF. San Luis Obispo Elem. and City High School Dist., 1445 Santa Rosa, San Luis Obispo, Calif. Bids Aug. 5. CD 7/23.

Maino Constr. Co., Inc., Box 709, 2238 S. Broad St., San Luis Obispo, Calif. LB $632,725 (4 bidders) general constr. 2 story 55,000 sq. ft. rein.-con. AGRICULTURAL CLASSROOM BLDG., at State Polytechnic College, SAN LUIS OBISPO, CALIF. State Div. Architecture, 1100 S. Grand St., Los Angeles, Calif. Bids Aug. 6. CD 7/11.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
August 28 British Columbia

▲ **Ont., Toronto**—BA 9/2—Municipality of Metropolitan Toronto, 67 Adelaide St. E., Frederick G. Gardiner Expressway, elevated structure, roadwork, excavation, drainage, retaining walls, concrete curb and gutter, concrete base, asphaltic concrete structure. $1,000,000. Plans deposit $75. A. D. Margison & Assoc. Ltd., 30 Eglinton Ave. E. in conjunction with DeLeuw Cather & Co. of Canada Ltd., 52 St. Clair Ave. W., engrs. CD 11/30/54.

Ont., Huntsville—BA 9/4—Ont. Water Resources Comn., East Block, Parliament Bldgs., Toronto, 27,000 lin. ft. sanitary sewers, laterals and force mains, Contr. A and sewage treatment plant, 3 sewage pumping stations, Contr. B, $415,000. R. V. Anderson & Assocs. Ltd., 194 Wilson Ave., Toronto, engr. CD 10/1.

BUILDINGS—BA

▲ **Alta., Edmonton**—PHYSICS-CHEMISTRY CENTER, etc.—BA 8/28—Provincial Govt., Legislative Bldg., physics-chemistry center, University of Alberta, $1,150,000. Plans deposit $100.

Ont., Malton—ASSEMBLY and TEST—BA 8/28—RCA Victor Co., Ltd., c/o Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, assembly and test bldg. and hangar, $500,000.

Que., Shawinigan Falls—PUBLIC—BA 9/10—Dpt. P. Wks., Hunter Bldg., Ottawa, 12,000 sq. ft. public bldg., corner 4 St. and Station Ave. $500,000. Jacques M. Morin, 6555 Cote des Neiges Rd., Montreal, archt. Leo Paul Roy, 5925 Monkland Ave., Montreal, engr. CD 2/3/56.

HEAVY CONSTRUCTION—LB & CA

ALBERTA—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.,

Mannix Ltd., 737 8 Ave. Calgary, Alta., LB $477,311. (3 bidders) reconstr. Banff Ave., Banff Townsite, Banff National Park. CD 5/15/57.

▲ **BRITISH COLUMBIA**—B. C. Government, Parliament Bldgs., Victoria,

Western Bridge & Steel Fabricators Ltd., 145 W. 1 Ave., Vancouver, B. C. CA $1,120,898. (3 bidders) erect Revelstoke Bridge superstructure at Mile 476.61 of Trans-Canada Hy. in Revelstoke Electoral Dist. Bridge Proj. No. 185, Revelstoke area. Bids June 10, awarded Aug. 5. CD 7/1, under LB.

▲ **BRITISH COLUMBIA**—Dpt. P. Wks., Hunter Bldgs., Ottawa, Ont.

Square M. Constr. Ltd., 10325-61 Ave. and **Coleman Colliers Ltd.**, both of Edmonton, Alta. (joint venture) CA $1,989,906. grading, culverts, Mile 0. to Mile 6, Trans-Canada Hy., Glacier National Park, Glacier. Bids June 5. CD 6/13, under LB.

Gilmour Constr. & Eng. Co., Ltd., 3795 E. 2 Ave., Burnaby, B. C., LB $409,742 (11 bidders) rein.-con. ramp type automobile parking facilities, Front St., NEW WESTMINSTER, B. C. City of New Westminster, City Hall, New Westminster, B. C. Bids July 21. CD 7/17.

▲ **Eastern Woodworkers Ltd.**, Brother St., New Glasgow, N. S., CA $1,045,976. 100 row HOUSING units, R.C.A.F. Station, GREENWOOD, N. S. Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S. Bids July 8, awarded Aug. 5. CD 7/31, under LB.

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto, Bids opened 8/6,

Ont.—**McNamara Road Constr. Co., Ltd.**, 42 Industrial St., Toronto, Ont., LB $415,457. (13 bidders), grading, culverts, granular base, 6.77 mi. Trans Canada Hy. 17 from Heyden to Goulais, (58-169), Heyden;

Ont.—**Scott-Jackson Constr., Ltd.**, 215 N. Queen St., Toronto, Ont., LB $77,520. (7 bidders), grading, culverts, granular base, hot mix paving Hy. 27, Dixon Rd. interchange (58-172), Toronto. CD 7/23.

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto, Bids opened 7/30,

Sterling Constr. Co. Ltd., 2494 Riverside Dr. E., Windsor, Ont., LB $695,612. (3 bidders), Contr. 58-126, grading, granular base and hot mix paving 9.6 mi. Hy. 98, from Charing Cross to Merlin. CD 7/17.

Dravo of Canada Ltd., 159 Bay St., Toronto, Ont., CA About $500,000. loading dock quarter mile from shore at Ogden Point, quarry stone causeway, 700 ft. long trestle to carry belt conveying sys., OGDEN POINT, ONT. St. Lawrence Cement Co., Clarkson, Ont. Awarded Aug. 1.

▲ **S. McNally & Sons Ltd.**, P. O. Box 157 Station "C", Hamilton, Ont., CA $6,652,217. aeration and final settling tanks, Ashbridge's Bay Sewage Treatment Plant, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 7, awarded Aug. 7. CD 7/28, under LB.

Foundation Co. of Canada, 1900 Sherbrooke St. W., Montreal, Que., CA $548,650 (24 bidders) piers and abutments, Sect. 3 of Nuns' Island Bridge, MONTREAL, QUE. National Harbors Bd., West Block, Parliament Bldgs., Ottawa, Ont. Bids July 31, awarded Aug. 8. CD 7/14.

PRINCE EDWARD ISLAND—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.,

Morrison & McRae Ltd., 70 Spring St., Summerside, P. E. I., CA $638,552 (8 bidders), grading, culverts, paving, Prince Edward Island National Park, Rustico Harbor. Awarded Aug. 1. CD 7/11, under LB.

BUILDINGS—LB & CA

Sam Hashman & Co., Ltd., 929 17th Ave. S.W., Calgary, Alta. CA $700,000. rein.-con. masonry, glass MOTOR HOTEL BLDG., 4 Ave. between 3 and 4 Sts. S.W., CALGARY, ALTA. Western Motor Hotels Calgary Ltd., c/o 929 17 Ave. S.W., Calgary, Alta. Abugov & Sunderland, 909 15 St. E. Calgary, Alta., archts. Awarded Aug. 4.

Atlas Constr. Co., Ltd., 4781 St. Catherine St. W., Montreal, Que., LB $419,078, Canadian Army Camp HIGH SCHOOL, CAMP GAGETOWN, N. B. Defence Constr (1951) Ltd., 56 Lyon St., Ottawa, Ont. CD 8/5.

▲ **Canadian Westinghouse Co. Ltd.**, 286 Sanford St. N., Hamilton, Ont., CA two 340,000 kv power transformers for Lakeview GENERATING STATION, near Toronto, ONTARIO. Ontario Hydro-Electric Power Comn., 620 University Ave., Toronto 2, Ont. CD 8/30/57.

▲ **Eastern Constr. Co.**, Box 161, Walkerville, Ont., CA $1,000,000. 5 story, brick, steel HOSPITAL WING, CHATHAM, ONT. Ursuline Sisters, Sister St. Anthony, administrator, Chatham, Ont. CD 6/24/57.

T. A. Jones Constr. Ltd., 22 Northumberland St., Port Arthur, Ont., CA About $780,000 (10 bidders), WAREHOUSE and RETAIL STORE, Harold Crescent, FORT WILLIAM, ONT. Liquor Control Board of Ontario, 55 Fleet St. E., Toronto, Ont., Bids 7/25, awarded Aug. 4. CD 7/12.

▲ **Ellis-Don Ltd.**, Box 852, London, Ont., LB $1,133,879 (7 bidders), WAREHOUSE No. 4 and utilities for WAREHOUSES No. 4 and 5 at Canadian Army Camp, LONDON, ONT. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. M. M. Dillon & Co., Ltd., Maple St., London, Ont., and 88-90 Elington Ave. E., Toronto, Ont., archt. CD 9/25/53.

Ellis Don Constr. Co., Box 852, London, Ont. CA $600,000. 5 story, bsmnt., 128x187 ft., steel, Indiana limestone CONVENT, LONDON, ONT. Mother House, Mount St. Joseph, London, Ont. Watt & Tillman, 343 Richmond St., London, Ont., archts. Awarded July 21.

▲ **Pierre Ritchot**, 80 Blvd. l'Ange Gardien, L'Assomption, Que., CA Est. $2,000,000, 3 story COLLEGE addn. L'ASSOMPTION, QUE. College L'Assomption, L'Assomption, Que. Bids May 5, awarded July 31. CD 4/23.

▲ **Louis Donolo (Ontario) Ltd.**, 2790 Dufferin St., Toronto, Ont., LB $1,997,218, two APARTMENT bldgs. for senior citizens, one L-shaped 10 and 11 stories, 180 x 45 x 150 ft. and one 2 story 45 x 350 ft., rein.-con. frame, masonry, Queen St. W. and Lansdowne Ave., TORONTO, ONT. Metropolitan Toronto Housing Co. Ltd., 203 Sackville St., Tronto, Ont. Bids July 21. CD 7/17.

U. S. POSSESSIONS

HEAVY CONSTRUCTION—BA

▲ **Hawaii**—BA About 10/2—Hawaii Territorial Hy. Dpt., Honolulu,

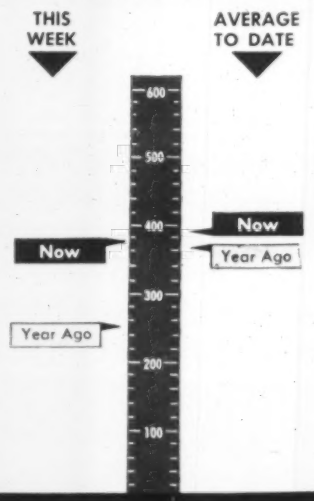
portion of Likelike Highway, Fed. Aid Proj. S-0630 (3) and Lunalilo Freeway, Fed. Aid Proj. U-072-1 (7) Unit 3 and Kalihi St. Fed. Aid Proj. US 0630 (2) District of Honolulu, Island of Oahu, Jobs No. 5914, 5983 and 5984. Plans deposit $100.

(Proposal Advertisement see pp. 140 to 144)

Construction Scoreboard

ACTIVITY THIS WEEK

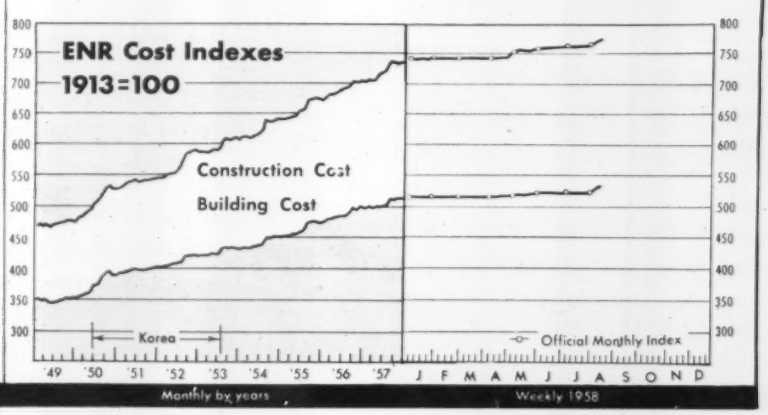
Contract Awards
Millions of Dollars



COST INDEXES AS OF NOW

ENR INDEXES (1913=100), 20-cities' average	Week of Aug. 14 1958	% Change from July 7 1958	% Change from Aug. 15 1957
Construction Cost	771.75	+1.1	+4.5
Building Cost	533.69	+1.7	+3.3

To convert above indexes to 1926 = 100; Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100; Divide Construction Cost by 4.770; Building Cost by 3.518.



AMOUNT OF CONTRACTS LET

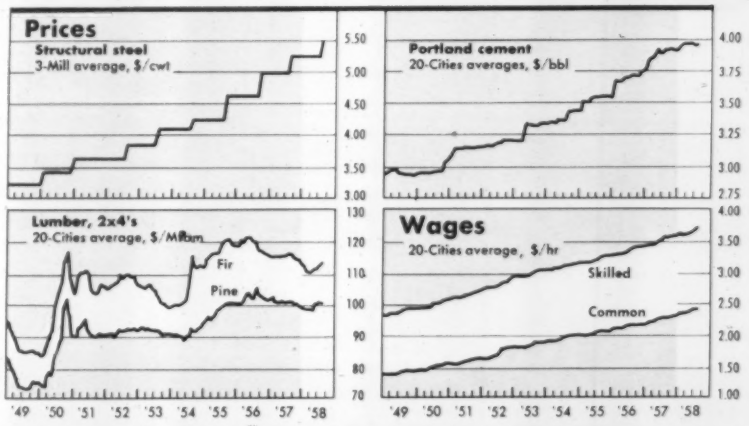
By Ownership	This Week	Cum. 34 wks 1958	Chge '57-'58 %
	millions		
All Heavy Constr.	$373.0	$13,333.8	+7
Private	161.4	5,520.0	−4
Public	211.6	7,813.8	+17
State & Municipal	166.4	5,587.3	+14
Federal	45.2	2,226.5	+26
By Type of Work			
Public			
Waterworks	6.0	218.8	−10
Sewerage	21.4	407.2	+10
Bridges*	10.6	468.9	−2
Highways	84.5	2,218.1	+6
Earthwork, Waterways	13.4	769.3	+5
Buildings, Excl. Housing	37.9	1,791.0	+20
Housing	13.2	900.1	+97
Unclassified	24.6	1,049.6	+30
Private			
Mass Housing	85.1	2,629.8	+32
Commercial	42.7	1,286.9	+9
Industrial	25.6	1,278.6	−43
Unclassified	8.0	315.5	−4

* Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

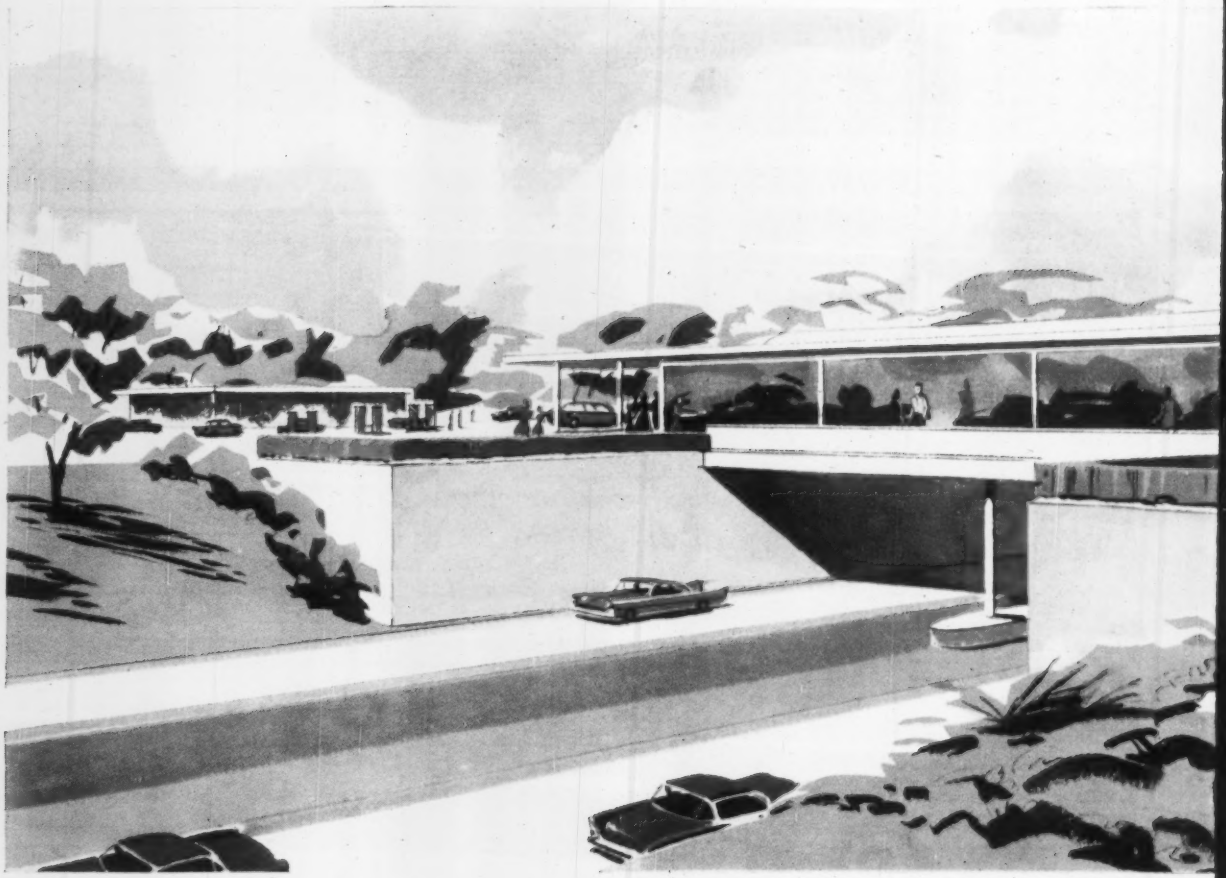
	Week of Aug. 14	Cum. 33 wks 1958	Chge '57-'58 %
	millions		
Corporate Securities	$37.9	$3,523.9	−6
State and Municipal:			
All Except Housing	92.4	4,241.1	+24
Housing	...	33.8	−78
Federal Loans	14.8	136.6	−13
Federal Aid	...	....	−100
Total Nonfederal	$145.1	$7,935.5	−18
Federal Appropriations:			
Projects in U. S.	...	$849.5	+99
Outside U. S.	...	6.3	−72
Total New Capital	$145.1	$8,791.3	−13



ENR COST INDEXES IN 22 CITIES, 1913 = 100

City	Construction Cost Aug. 1958	Construction Cost Percent Change from last Month	Construction Cost Percent Change from last Year	Building Cost Aug. 1958	Building Cost Percent Change from last Month	Building Cost Percent Change from last Year
Atlanta	568	0	+3.3	467	0	+1.9
Baltimore	701	0	+4.6	527	0	+1.7
Birmingham	593	0	+5.5	480	0	+2.5
Boston	800	+0.6	+7.5	538	+0.9	+1.2
Chicago	845	+0.6	+0.8	546	+1.0	+3.1
Cincinnati	771	0	+2.6	510	+0.6	+0.5
Cleveland	868	0	+0.6	521	0	−1.4
Dallas	568	0	+3.8	463	+0.4	+3.3
Denver	725	0	+2.2	525	0	+0.8
Detroit	875	+2.6	+5.1	555	0	+1.7
Kansas City	762	0	+2.7	527	0	+2.2
Los Angeles	816	0	+4.8	516	0	+1.7
Minneapolis	818	0	+3.8	548	0	+2.0
New Orleans	592	0	+2.0	477	0	+0.3
New York	939	+0.5	+5.5	608	+0.8	+3.0
Philadelphia	795	0	+1.1	569	0	+8.9
Pittsburgh	821	0	+3.6	585	+0.8	+2.9
St. Louis	843	0	+6.0	562	0	+3.1
San Francisco	801	+0.4	+5.0	514	+0.6	+3.8
Seattle	789	0	+4.1	474	0	+0.9
U. S.—20 Cities' average	764	+0.3	+3.5	526	+0.3	+1.7
Montreal	603	0	+2.6	449	0	−0.6
Toronto	604	0	−0.7	469	0	+0.1

Toll road service plazas of the future—
now open for business



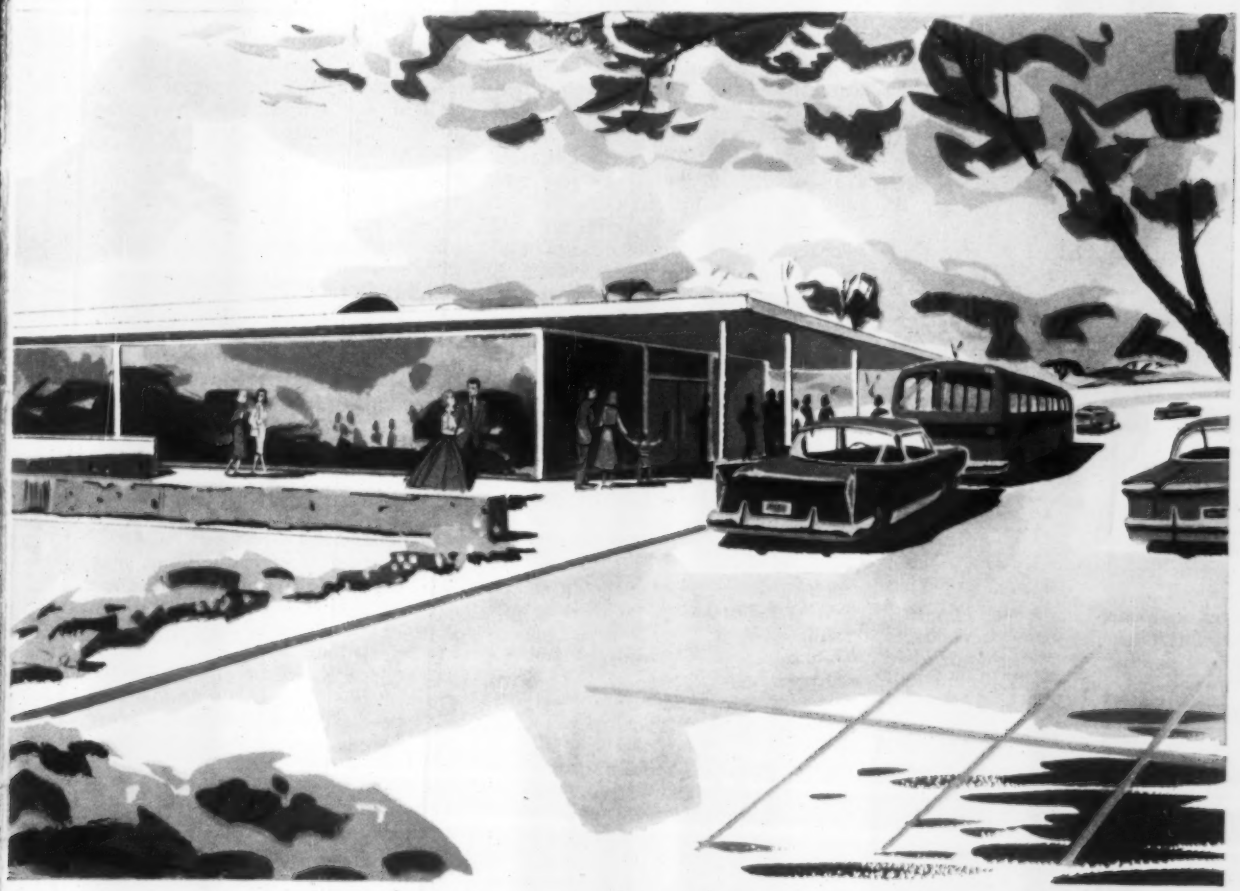
American Welded Wire Fabric, too, played a vital role in constructing these plazas. 319 tons of it have been used in the ground slabs and the waffle slabs in the service station roofs. And USS American Super-Tens Stress-Relieved Strand was used in prestressing the rest of these all-concrete structures. **Owner:** Standard Oil Company of Indiana. **Architect:** Pace Associates, Chicago. **Contractor:** Ragnar Benson, Inc., Chicago. **Prestressed Concrete Beam Supplier:** Midwest Prestressed Concrete Company, Rochelle, Illinois.

USS American Super-Tens Stress-Relieved Wire and Strand

Combination restaurants and gas stations exactly like this are now open on the brand-new Illinois Toll Highway. These are truly service plazas of the future, beautifully designed for fast service, comfort, and convenience.

The Illinois Toll Highway service plazas were built with speed and efficiency, using pre-stressed concrete. Each of these projects includes 22 pretensioned, prestressed concrete beams, 70 feet long. A total of 70 tons of USS American Super-Tens Stress-Relieved Strand assures the long life and maintenance-free service of these prestressed beams.

Be sure to investigate prestressed concrete for your next building. It provides permanent crack resistance . . . faster, easier installation . . . reduced maintenance. And when you choose prestressing wire or strand, specify the brand which has been proven the finest on the market—USS American Super-Tens. New Super-Tens Stress-Relieved Wire lies straight and flat. Super-Tens Stress-Relieved Strand complies with ASTM Specification A416-57T.



For engineering assistance, or for more information on a complete line of prestressing wire and strand, call America's pioneer in the development of strand for prestressed concrete—*American Steel & Wire. Or write American Steel & Wire, Rockefeller Building, Cleveland 13, Ohio.*

USS, American and Super-Tens are trademarks

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Interest Rates Start to Hurt

Private and public spending plans may be affected by revived upward movements in the money markets

The nation's communities have seen their best chance to borrow at lowest possible cost for municipal improvements. Interest charges on all types of municipal bond offerings have been climbing steadily since reaching their low point in the last week of April and the first week in May.

And last week's action by the Federal Reserve Board in approving a ¼% boost in the discount rate from 1.75% to 2% at the Federal Reserve Bank of San Francisco fully confirms the fact that "cheap money" is out the window for some time to come. (The discount rate is the fee Federal Reserve banks charge for loans to member commercial banks.)

The other 11 Federal Reserve Districts are expected to follow San Francisco's action. This move gives support to the views of some investment authorities that there is a good chance interest rates will climb past last year's peaks.

There are some figures to give strength to that belief. For example, the DAILY BOND BUYER's average of 20 municipal bonds at the end of last week stood at 3.27% after climbing from a low this year of 2.85%. The latest figure compares with the 3.58% high of last year, which was the highest charge in seven years.

• **Corporate headache**—The unsettled condition in the money markets brought some second thoughts to some industrial and public utility financial officers.

Two utility companies postponed bond offerings. Last week, Montana Power Co. delayed a $20 million bond issue. Prior to that, Utah Power & Light Co. postponed an offering of the same amount. Both offerings were delayed because of declines in the prices of U. S. Treasury issues, which call the turn on yields throughout the financial structure.

Earlier this year, Standard Oil of California postponed "indefinitely" the sale of $150 million in sinking fund debentures.

Underlining the higher cost of borrowing was the sale last week by Consolidated Natural Gas Co. of $45 million of debentures. They were priced to yield 4.30%. They are AAA-rated securities.

Compare Consolidated's yield with that of Philadelphia Electric Co.'s offering as recently as April 30. The AAA-rated first mortgage and refunding offering was priced to yield 3.76%.

• **A reason**—Most of those in government, business and investment are pinning the blame for higher money cost on fear of more and more inflation. Convinced that the value of a dollar will continue to decline, investors are unloading fixed income securities if they are in a position to do so. And they are not rushing into purchase of new offerings of any type unless they carry a generous interest payment.

Obviously federal government and federal monetary officials are convinced of the same thing. The recession is ended, and the big problem now is inflation. They are moving to halt it—perhaps an impossible task—or at least stem the tide (see p. 23).

• **Will it hurt?**—The latest move by the Federal Reserve will be condemned by many financial men. They agree that the recession has bottomed out, with some economic indicators definitely on the way up. However, they believe the nation is by no means fully out of the economic woods.

There is no general boom in action. Most industries are far short of producing at capacity, while some, such as nonferrous metals, actually remain in a depressed state.

Unemployment still tops 5 million, another symbol of less than exuberant economic well-being. So why did the Federal Reserve Board authorize a discount rate boost? For one thing, its action was merely following a market that had already been established. Secondly, it was a loud signal that FRB had turned from a policy of easy credit.

Many believe the Board's move is too drastic and too soon. They say that when business had at last showed signs of turning itself around, this action will discourage borrowing for new construction, modernization, and homebuilding.

But all of the opinions will not outweigh those of Federal Reserve Board officials who are in a position to back them with basic action. They believe, and they have said so publicly in the past, that the Board did not act fast enough when the nation was recovering from the 1953-54 recession.

In 1955, the economy took off on a homebuilding and car-buying spree that spilled over into all segments of the economy. It was great while it lasted, but there is little doubt that within the apparently healthy economy was the growing cancer of inflation.

When the boom ran out of steam in 1957, the results of the disease remained, but at least some of its destructive potentials were slowed. Now that the nation's business health has improved, the FRB is determined not to let a normal recovery blossom into an uncontrolled chain reaction boom.

• **Marginals hit first**—After the first shock of the move by the FRB has faded, the biggest and strongest companies will come into the market, if and when they need funds. Those communities whose capital improvement plans are completed will also take financial action as a first step toward actual construction. But those businesses that are still weak from the recession may hesitate to burden themselves with debt they feel is too expensive. Generally, the smallest companies and individuals will be penalized by climbing rates of interest.

• **Homebuilding**—Rising interest costs may eventually hurt in the homebuilding industry. But chances are this won't curtail the operations of builders this year. The government, through the Federal National Mortgage Association and its past policy of easy credit, has provided the industry with a strong working base. Also, mortgage interest rates did not drop sharply when other rates did. Traditionally, mortgage rates are "sticky" and are usually the last to drop.

In addition, homebuilders have their construction programs solidly established for this year. They have received financing commitments from lending institutions and they know the lenders' agreements will not be withdrawn. There may be scattered instances of loan institutions' pulling the rug from under builders. But these will be isolated and special cases, not a general trend or practice.

Should credit continue to become more expensive, its effects may be felt in homebuilding in the first or second quarters of next year.

Architect-Engineer Volume Down

The dollar value of design jobs handled in 1957 by architect-engineering firms dropped 39% to $3,270 million, compared to 1956, a new ENR analysis shows.

It is the smallest volume of new business since 1954. The number of projects was down 7% to 1,893. The survey covered firms doing $100,000 or more in new business.

The analysis also shows the number of architect-engineering firms increased last year by 1% to 383, compared with 1956.

Architect-engineering firms are those that do both architectural and engineering designing.

Some categories of business showed increases, however. The firms handled $24 million in earthwork-dams-waterways work, 11% more than the previous year. They did $200.4 million bridge design jobs, up 168%, and $71.3 million in waterworks design, an increase of 106%.

• **Sharpest drops**—The over-all volume of work in the other-than-building category was down 61% to about $1 billion, despite only a 1% drop, to 408, in the number of such projects. Unclassified jobs dropped drastically—from $1.6 billion in 1956 to $100.1 million in 1957. Highway work totaled $449.5 million, off 27%, and airport design jobs were down 39% to a total of $138.4 million.

Design of buildings fared somewhat better. It declined 18% to $2.25 billion, and industrial building design slipped 12% to $494.2 million.

• **Big firms still lead**—Million-dollar firms continue to dominate the architect-engineering field. They took 98.4% of the business done by firms in the $100,000-a-year-and-over class. Hence the overall record reflects chiefly the experience of these largest firms. They cornered all highway and waterworks business in 1957 and virtually all bridge design jobs.

Medium-size firms (in the $500,000 to $1 million class) recovered some earthwork-dams-waterways jobs lost the year before, but the value of this work was small—$1.4 million. In the mass housing, commercial and public building fields, the number of medium-size firms rose 29% to 40 firms. But their business dropped 6% to $23.5 million.

An ENR analysis of consulting engineering firms showed their number decreased by 7% in 1957 to a total of 1,555 from the record number of 1956. The number of projects also slipped, along with the dollar volume of work done (ENR Aug. 7, p. 24).

Gas Construction to Set Record

The U.S. gas industry's spending for construction will touch almost $1.87 billion in 1958, bettering the all-time high of $1.77 billion set last year. Figures are from the American Gas Association's annual survey of gas utility and pipeline construction expenditures.

The new total compares with the $1.97 billion expansion predicted last year for 1958. The association attributes the reduction to the impact of the Phillips and Memphis court decisions (ENR June 5, p. 114) and the clouded economic outlook.

The association predicts that spending will drop slightly in 1959, then shoot to new heights in the 1960s. For the two-year period 1958-59, however, anticipated construction expenditures will total $3.60 billion, or 8.4% more than the previous two-year high of $3.32 billion established in 1956-57. More than 96% of the funds will be used for expansion of natural gas facilities.

Extension of transmission systems accounted for the largest single portion of last year's construction expenditures. And this total, $753 million, is expected to rise to $918 million this year, then drop to $693 million in 1959.

Spending for distribution facilities, which has been steadily increasing in recent years, totaled $593 million in 1957, an 11.1% gain over the $534 million spent the year before. In 1958, $575 million will be spent, and in 1959 a new high of $682 million will be reached. A setback will follow and distribution facility spending should dip to $624 million in 1960 and $610 million in 1961.

Outlays for production and storage facilities broke new ground at $350 million last year. The AGA says $289 million will be spent on these items in 1958 and $280 million in 1959.

The Phillips decision, handed down in 1954, placed the price of natural gas at the wellhead under Federal Power Commission regulation. The Memphis decision, of last November, changed rate-fixing procedure so that pipeline companies must obtain their customers' agreement to new rates before they can be put into effect. Previously rates went into effect prior to agreement and revenues were set aside until the FPC ruled on the changes.

Private Housing in July Sets High Mark of Year

Private housing starts in July set a new high mark for the year so far, the U.S. Bureau of Labor Statistics says. There were 107,300 starts, 3% above June and 14% above a year ago. Total starts for the month were at an annual rate of 1.16 million, the third successive month in which they topped the million-a-year rate.

While private activity was mounting, public housing dropped to 3,700 starts from 10,000 in June, a 65% decline and 38% below the 6,000 starts a year ago. Yet over the first seven months, public housing was 21% ahead of 1957 starts.

The steep slide in public housing activity held over-all housing starts to 111,000, 3% below June's total of 115,000. The over-all figure is still 11% above a year ago. Through July, starts totaled 646,000, or 6% over 1957.

Houston Spreads Out, More Work, More Taxes

Houston is 187 sq mi bigger as a result of a U.S. Supreme Court decision upholding annexation by the city of land previously administered by Harris County. Now the city will assume maintenance of about 800 miles of streets and control of 27 water districts.

The city gains $3.7 million in tax collected from the annexed area and held in escrow pending outcome of a court case brought by opponents of city expansion. Houston now has real estate holdings of 351 sq mi, second only to Los Angeles' 450.

Baltimore Lifts Taxes As Spur to Industry

Baltimore has restored complete tax exemptions on the tools, machinery and inventories of new industries in a move to encourage industrial expansion. Existing manufacturers' expansion programs are now exempt from taxes on tools and machinery.

The tax on these items was adopted in 1957.

(*B&F continued on page 135*)

ROUGH GROUND DOESN'T STOP THIS RUBBER-TIRE EXCAVATOR!

How LORAIN SP-107 licks off-the-highway travel:

- **Oscillating, spring-mounted front axle**
- **Hugs the ground for maximum traction**
- **No hang-up . . . no wheel spin**
- **Powerful, 4-wheel drive**

Until now, Self-Propelled, rubber-tire shovel-cranes were restricted pretty much to smooth, hard-ground travel. Now, the 3/8-yd. Lorain SP-107 is available — to move right in over the rough, soft-ground conditions that exist off-the-highway on most hoe, shovel and dragline jobs.

Lorain put a powerful, 4-wheel drive carrier under the hydraulic-controlled turntable and then added an oscillating, spring-mounted front axle. Result? Vastly improved off-the-highway travel. Front wheels hug the ground and the 4-wheel drive carries the SP-107 where self-propelled machines could not go before . . . hang-up and wheel spin are no problems.

Where *maximum* lifting capacity is needed, the front spring action can be quickly "locked out" to give solid axle, full 7-ton crane capacity over front, rear or sides, without setting out-riggers.

This "go anywhere" rubber-tire shovel-crane combines mobility, maneuverability and tractive power to get in to the job . . . get it done in a hurry . . . and get out fast . . . to hustle down street or highway to the next job.

There is more you should know about the SP-107 . . . features such as: fast, easy-acting hydraulic clutch controls; the optional 4-wheel steering; the exclusive, lighter, yet stronger, square-tubular-chord crane boom. And best of all, the surprisingly low cost for such Lorain quality.

See your Thew-Lorain Distributor . . . and check, too, the on-the-spot parts and service facilities that are such plus values when you buy Lorain!

Notice how wheels on the oscillating, spring-mounted front axle of the SP-107 hug the rough terrain . . . keep powerful, 4-wheel traction at work.

The Thew Shovel Co., Lorain, Ohio, U.S.A.

THEW LORAIN® SP-107

RELIABILITY IN ACTION

Where Reclamation Funds Will Go

The Bureau of Reclamation has disclosed its construction spending plans for this current fiscal year. The $220.4 million program is based on an appropriation bill Congress finally pushed through to completion. Next step is to get the President's signature. Unless there are changes along the way, here is where the Bureau's construction money will go. Only projects costing $1 million and more are listed.

Region 1 (Hq: Boise)

Little Wood River Project, Idaho, $1.3 million. Dam and reservoir.

Crooked River Project, Oregon, $2 million. Dam and reservoir, canal.

Rogue River Basin Project, Talent Division, Oregon, $9.5 million. Dams and reservoirs, power conduit, power plant, switchyard and irrigation canals.

Columbia Basin Project, Washington, $10.2 million. Laterals, pumping plants, irrigation canals.

Region 2 (Hq: Sacramento)

Central Valley Project, California, $43.5 million. Dam, tunnel, relocation of roads, surveys and designs, utility extension.

Santa Maria Project, California, $1.7 million. Dam and highway relocation.

Solano Project, California, $1.6 million. Canal.

Ventura River Project, California, $10.1 million. Dam, highway relocation, canal and conveyance systems.

Region 3 (Hq: Boulder City)

No projects of $1 million or more.

Region 4 (Hq: Salt Lake City)

Colorado River Storage Project, Arizona, Colorado, New Mexico, Utah, and Wyoming, $67.3 million.

- Flaming Gorge Unit, Utah and Wyoming, $10.6 million. Dam, power plant, switch yard, tunnel and access roads, buildings, housing.
- Glen Canyon Unit, Arizona and Utah, $47.8 million. Dam, power plant, switchyard, streets, utilities, houses, highway bridge.
- Navajo Unit, New Mexico and Colorado, $7.5 million. Dam, work facilities.
- Paonia Participating Irrigation Project, Colorado, $1 million. Dam and reservoir, highway relocation.

Weber Basin Project, Utah, $6.7 million. Pumps and pumping plant, irrigation canals, dam, recreation facilities. Relocation of highways and power lines also will be involved in the project, along with water supply line replacement.

Collbran Project, Colorado, $4.9 million. Dam and reservoir, canal, access roads, penstocks.

Region 5 (Hq: Amarillo, Tex.)

Washita Basin Project, Oklahoma, $6.5 million. Dam and reservoir, municipal and industrial water facilities.

Cameron County Water Control and Improvement District No. 1 (Harlingen Division), Texas, $4.6 million. Irrigation system.

Middle Rio Grande Project, New Mexico, $3.6 million. Channel improvements.

Region 6 (Hq: Billings, Mont.)

Fort Peck Project, North Dakota, $2 million. Electrical transmission line, substations.

Helena Valley Unit, MRB, Montana, $2.5 million. Pumping plant, tunnel, canal, laterals and drains.

Owl Creek Unit, MRB Wyoming, $1.2 million. Dam.

Transmission Division, MRB, $8.8 million. Electrical transmission lines in Wyoming, $340,000, North Dakota, $4.7 million, Minnesota, $1.8 million, South Dakota, $1.9 million (including office building).

Missouri River Basin Project Investigations, $1.4 million. Surveys.

Region 7 (Hq: Denver)

Webster Unit MRB, Kansas, $1.3 million. Canals, pumping plants, dam.

Ainsworth Unit, MHB, Nebraska, $1.1 million. Dam and reservoir, access road, construction facilities.

Bostwick Division, MRB, Nebraska-Kansas, $1.8 million. Irrigation works, recreation facilities.

Frenchman - Cambridge Division, MRB, Nebraska, $3.8 million. Dam, office building, irrigation work.

Transmission Division, MRB, Colorado-Nebraska-Wyoming, $1.5 million. Substations, transmission lines.

REA Expansion Threatened

Comptroller General Joseph Campbell, Congress' watchdog over federal expenditures, has put a dark shadow over the future expansion plans of most U. S. electric cooperatives.

An intense legal battle is under way in Washington, with the Agriculture Department and the National Association of Rural Electric Cooperatives petitioning Mr. Campbell to rescind his disputed ruling.

This is the situation:

Mr. Campbell has ruled that the Rural Electrification Administration, an agency of the Agriculture Department, has no right to lend federal money to co-ops in areas where private power companies are willing to provide adequate service to new customers.

If this ruling stands, and is enforced, most observers in the Capitol believe it will end future construction of new generating and transmission facilities by virtually all rural electric co-ops. There are 986 active REA power-type borrowers. Best available figures indicate they have in progress, or will begin, $282 million worth of construction during the fiscal year ending June 30.

Pending reconsideration, in response to urgent pleas of the Agriculture Department and NAREC, Mr. Campbell has suspended his decision. This week, REA was going ahead with its loan business as usual. A spokesman says the agency plans to lend $275 million for co-op construction this fiscal year.

This will not be the case, if Mr. Campbell sticks firmly to his decision and Secretary of Agriculture Ezra Taft Benson yields to the comptroller general. Mr. Campbell has no enforcement powers; his only recourse, if a department or bureau ignores him, is to point out to Congress what he considers to be a violation of letter or spirit of a federal law. However, on these points, the two men are not telling what their possible future course of action will be.

Court Ruling Clears Way For Chicago Exhibit Hall

An Illinois Supreme Court ruling has restored Chicago's chance for a lakefront convention and exhibit hall. The court refused to restrict State Treasurer Elmer Hoffman's right to buy bonds of the $29 million project. Mr Hoffman then affirmed that the state was "prepared to purchase" up to $20 million of revenue bonds carrying a 5% interest rate.

Private investors also may support the project, reversing an earlier stand, which left the state as the only prospective investor (ENR May 1, p. 79). The change of heart is the result of the court's finding that racetrack receipts were adequate to pay debt service on the project's bonds. The hall will take about 20 months to build and cost about $34 million, financing included. The sponsors soon will ask for bids on a 1,500 ft bulkhead, to be built offshore from the site, and on a 80,000 cu yd fill job.

Work Restrictions Win Court Approval

Effort of a painters district council to curb the use of rollers and spray guns is called lawful union aim

Union contract restrictions on the use of labor saving devices in the construction industry have been put in a new perspective.

A California court has ruled it is a lawful union objective to try to obtain, extend and preserve employment opportunities by restricting the use of new techniques and devices that displace workmen. And the restrictions do not violate the state's antitrust law so long as restraint of trade is not the direct intent of the restrictions.

At the same time, the court indicated, there is no legal objection to premium pay for using labor saving devices for this is part of the "ordinary economic and social" process of giving workers their "share" of the fruits of technological progress.

The case developed out of a complicated painters' situation in lower California—a situation from which District Fifty's United Construction Workers, ironically enough, now seems to be emerging as one of the principal victors.

Involved in the basic dispute are the Orange Belt Chapter of the Painting and Decorating Contractors Association of San Bernardino and the local AFL-CIO District Council of Painters (No. 48).

• **Background**—The problem goes back to the days following World War II, according to the painters, when tract housing developments mushroomed throughout the three-county Orange Belt area.

Commercial painters, they say, did sloppy, unworkmanlike jobs with rollers and spray guns. The result was to encourage do-it-yourself homeowners, who felt they could do as well themselves and who cut deeply into the job opportunities of painters.

As a countermeasure, the District Council, through collective bargaining, wrote into its union contract several restrictions on the use of paint brushes, pan-fed rollers, pressure-fed rollers and spray guns.

• **Restrictions**—The restrictions approached the problem in a negative fashion. The contractors did not contract away their right to buy and use rollers and spray equipment. And the union specified what kind of work its members would do for the price paid.

The contract limited the use of both types of equipment on certain specifically described surfaces, regulated the size of brushes used, prescribed certain health and safety regulations governing use of sprayers, and set the wage scales for the different types of work.

The painters admitted the contractors could have saved a substantial amount of money without the restrictions by having fewer men do a larger volume of work. The contractors said the amount saved "would be not less than 30%" of their current payrolls.

• **The challenge**—In an effort to free themselves from the restrictions, the contractors filed suit in the name of the association.

They claimed the restrictions were in restraint of trade and a violation of the California antitrust law.

The painters argued that the problem doesn't involve restraint of trade. They claimed the right to restrict use of tools as well as to specify hours of work and rates of pay.

• **The law**—The court agreed with the painters.

"If an employee is entitled to bargain collectively concerning with whom he shall work," Judge Martin Coughlin said, "he certainly has the right to bargain in like manner with respect to the kind of service he shall render for the price agreed to be paid." Noting that the operator of a power shovel gets paid more than a "pick and shovel" man, the court said the union had merely agreed to do only "pick and shovel" work for "pick and shovel" wages.

Furthermore, a worker "is entitled to his share of the benefit of labor saving devices," the court said. That share is ordinarily represented by higher wages and shorter working hours. The court considered the painters' contract an integral part of that process of redistribution. "The force which a labor union may produce to speed up . . . such a distribution," it said, "is not in restraint of trade."

Since labor saving devices reduce the amount of available work, the court continued, an agreement to prevent the loss of job opportunities is "a lawful labor objective." In this sense, the contract is concerned "with conditions of employment." "The real purpose of the unions in the case at bar," Judge Coughlin said, "was not to restrict commerce but to extend labor opportunities and eventually obtain advantages in wages and hours of employment." The fact that the restrictions may represent an indirect restraint on commerce, he noted, is not compelling.

Objections to the decision have been filed by the association. A final judgment is expected later this month.

• **Complications**—Meanwhile, a number of collateral complications have occurred.

The painters' contract with the association expired while the suit was pending. Some association members later signed labor contracts with a rival union—UCW, which doesn't impose restrictions on rollers and spray guns.

The results have been twofold. The union effort to protect job opportunities has boomeranged so that there are fewer jobs available for the AFL-CIO unionists. And the contractors using UCW workers have been picketed. This has led to another court fight, which is still pending.

The basic dispute also has weakened the contractor association. June 30 was the expiration date for membership in the association. Several members then dropped out and have signed labor contracts with council locals.

Jurisdictional Strike Starts Over Filter Ball Placement

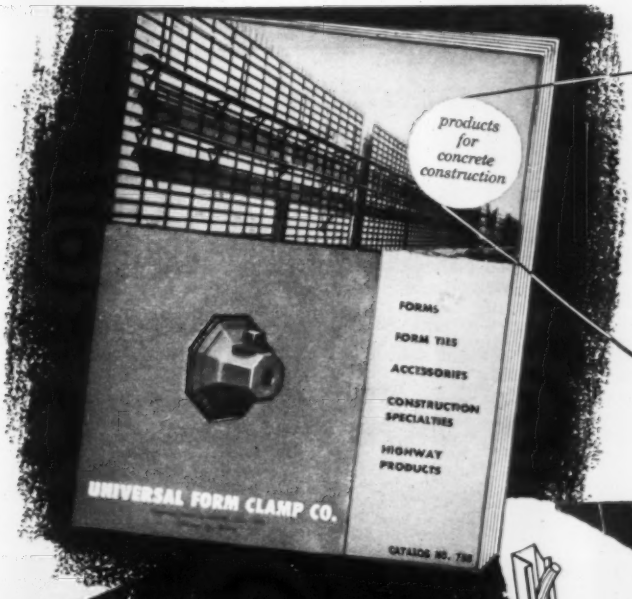
Carpenters working on the construction of a new waterworks plant in Ashland, Ky., walked off their jobs earlier this month because of a jurisdictional dispute with laborers.

The carpenters claimed the right to install filter balls in the bottom of filter tanks. The work had been assigned to the laborers.

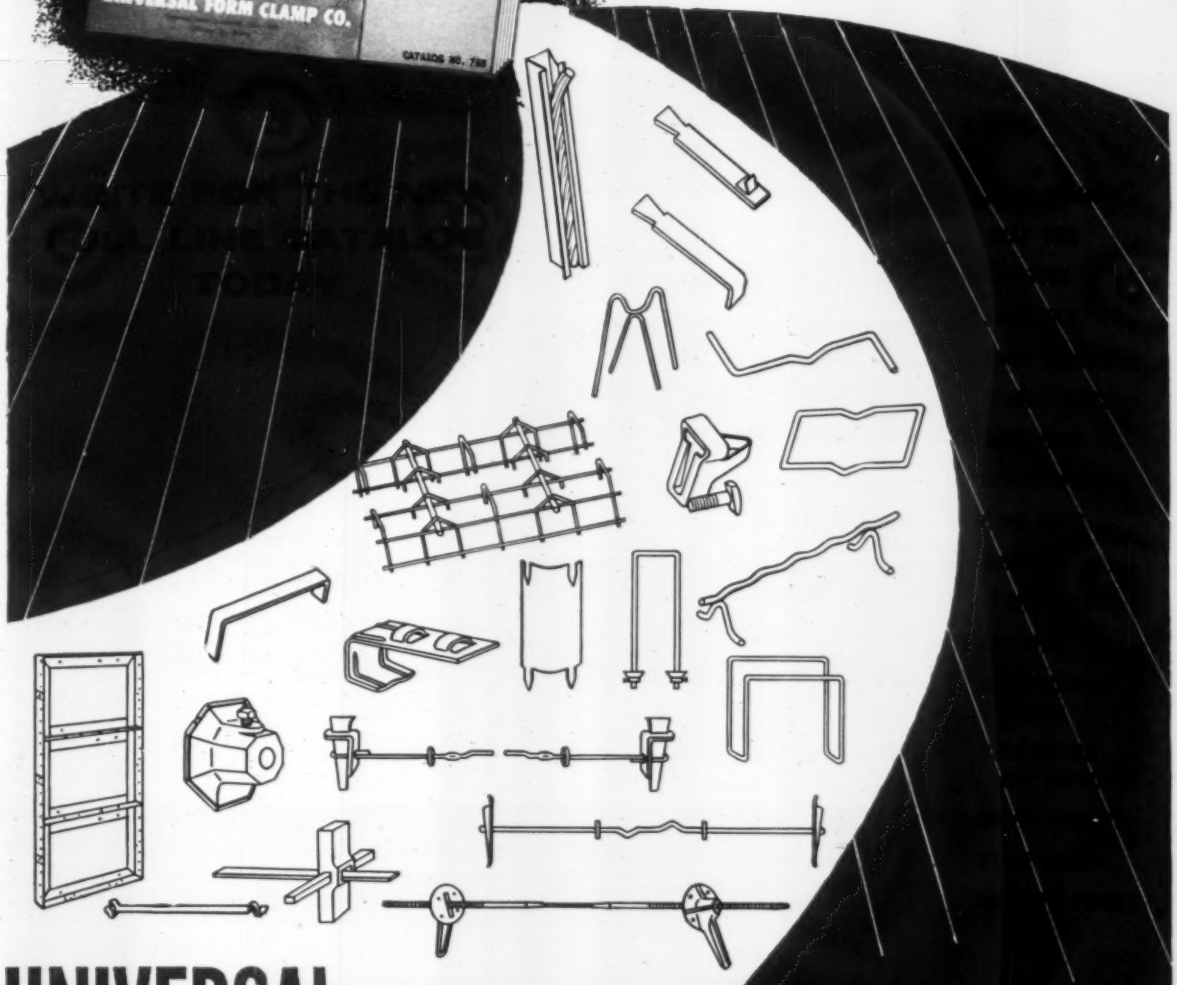
A strike sign erected by the carpenters was respected by the other crafts.

The dispute was referred to the National Joint Board for the Settlement of Jurisdictional Disputes and Board Chairman Richard Mitchell ordered the carpenters to return to work. They complied with the order—but by that time the laborers had completed the work.

(*Labor continued on page 138*)



products for concrete construction



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Universal Form Clamp

Two Major Strikes Near End

Eastern iron workers accept new two-year contracts; AGC and operating engineers tentatively agree

Two of the construction industry's biggest strikes were close to settlement last week. One was conducted by the iron workers union in upstate New York. The other involves members of the operating engineers union in Oregon and southwest Washington.

The strikes have continued for nearly two months and tied up an estimated $500 million worth of construction work.

• **Iron workers**—The New York settlement was reached after a 15-hour marathon session of a mediation team led by Acting Industrial Commissioner Charles Holloran.

Basis of the settlement is a 40 to 42½ cent hourly wage increase spread over a two-year period.

The contracts achieve an equalization of wage rates in the Albany, Binghamton, Utica, Rochester, Syracuse and Elmira areas and standardize travel pay and show-up time. Iron workers in the first three areas will receive an immediate 15 cent wage boost and those in the last three get a 17½ cent increase, both retroactive to June 1. This puts the pay scale at $3.67½. Next year, all the iron workers (about 2,000) will receive another 12½ cent pay boost.

Welfare payments are increased immediately by 2½ cents. The old contribution was 7½ cents. Next June a 1 cent pension contribution will become effective.

Travel allowances, both to and from jobs, are set at 8 cents a mile outside the 10 mile free zones. Maximum allowance, however, is $5 daily.

Effective June 1, 1959, union members will be entitled to two-hours show-up time when work is unavailable because of weather conditions. The amount now varies widely.

The contracts guarantee a 40 hour week for foremen and general foremen on jobs of over five days' duration.

The union originally demanded a 62½ cent wage package. This was later dropped to 47½ cents.

• **Operating engineers**—A new formula for settling the 32-day heavy construction strike in Oregon and Washington was reached on August 12 by the Associated General Contractors and Local 701 of the operating engineers union.

The agreement was announced by Oregon's Gov. Robert D. Holmes after representatives from each side had held a day-long session in the governor's office. Terms of the agreement were not disclosed, pending ratification by the union and the AGC.

The union had demanded an 80 cent package increase and the AGC had offered 70 cents. A 10 cent pension contribution was included in each.

Among the major stumbling blocks were a retroactive date for the first increase and a new formula for travel allowances.

Governor Holmes said he was hopeful work could be resumed early this week.

Strike Replacement

Jurisdictional striker loses right to his job, NLRB says

A union construction worker who leaves his job to support a jurisdictional strike forfeits his job rights and can be replaced by the contractor.

That is the effect of a recent ruling by National Labor Relations Board General Counsel Jerome Fenton. The ruling appeared as an Administrative Decision.

Mr. Fenton observed that such a worker is no better off than an economic striker. "He is subject to replacement at any time prior to an unconditional offer on his part to return to work," he said.

The question arose when a union that was engaged in a jurisdictional dispute went on strike and set up a picket line. Members of another union walked off the job in sympathy with the striking union. Those workers were replaced by the company and the employer was charged with discrimination amounting to an unfair labor practice.

Mr. Fenton considered the charge unfounded because the employer hadn't exceeded his legal rights.

In comparing the rights of the worker to those of an economic striker, Mr. Fenton was digging into one of the tricky areas of the Taft-Hartley Act.

The law protects the right to strike and prevents an employer from discriminating against employees because of union activities. In the absence of discrimination, however, a worker who strikes for economic reasons—such as wages or working conditions—can be replaced permanently if he's not discharged before the replacement is hired and if the replacement occurs before he offers to return to work.

One of the circumstances Mr. Fenton considered was that the strike was contrary to present union policy of settling work assignment disputes through the National Joint Board for the Settlement of Jurisdictional Disputes without resort to strike action. But he didn't stress this point or attempt to rest his decision on a finding that the strike was illegal.

Teamsters Strike

Trucking crippled in 11 western states as firms counter with a shutdown

There was no hope last week for an early settlement of a teamster strike and employer shutdown that has crippled trucking operations in 11 western states.

The first week of the strike, which began August 11, did not affect the construction industry. But it will seriously hamper building operations, now in the peak season, if it continues this week, according to the Associated General Contractors.

States directly affected by the strike are California, Oregon, Washington, Arizona, Nevada, Utah, Idaho, Colorado, New Mexico, Wyoming and Montana. The impact of the strike quickly extended as far east as Chicago.

The strike was started by Teamsters' Joint Council 38 after a deadlock in complicated union contract negotiations that commenced last spring. Those hit first were pickup and delivery firms in central California and Reno. The truckers countered with a shutdown, claiming a strike against one is a strike against all. An estimated 100,000 employees of both long-line and local pickup and delivery firms are affected. Railroads stopped "piggyback" hauling and ceased to accept shipments in or out of the strike area.

Earlier, a tentative agreement had been reached on a three-year contract calling for annual wage increases of 10 cents an hour, plus an additional pension contribution of 5 cents an hour. The council, which seeks wage parity with Oakland and five San Francisco locals, claimed the proposal applied only to long-line drivers and submitted new demands, including a cost-of-living escalator clause, for local drivers.

The teamsters consider the shutdown a lockout and have filed unfair labor practice charges with the National Labor Relations Board against four trucking associations.

(*Labor continued on page 140*)

There's a Barber-Greene ditcher to speed your jobs . . . to cut your costs

The two most advanced ditchers on the market. Left: Model 774 with wheel. Right: Model 784 with vertical boom.

Two machines in one. The same chassis can be used with wheel for cross-country digging where speed is important or with vertical boom for city work where tight quarters and frequent obstructions are encountered.

The Model 774 Wheel Ditcher digs to 66" deep, 30" wide. Model 784 Vertical Boom Ditcher cuts to 7' deep, 24" wide. Both machines offer exclusive dual-range Hydra-Crowd for infinitely variable digging speeds to 31' per minute, hydraulic controls, hinged connector between chassis and boom that eliminates twist and tilt, all-hydraulic spoil conveyor, automatic overload protection, new crawlers, and many other years-ahead advantages.

Crowding speed independent of wheel or bucket line speed. Can be changed instantly without stopping machine. Conveyor speeds infinitely variable—instant reverse.

House services. Model 705-B Runabout digs to 48" deep or more, 10½" wide. Favorite among utilities for house services. Vertical boom digs up to obstructions, leaves no ramp. Hydra-Crowd gives infinitely variable digging speeds. 15 m.p.h. travel.

Scattered jobs. Model 711 digs to 5' deep and 18" wide. 45 m.p.h. travel speed minimizes between-job time. One-man operation. Hydra-Crowd assures instant selection of correct crowding speed for every digging condition. Convenient operator's cab.

Narrow trenching. The Model 702 is a remarkably low-cost unit that digs to 5" wide, 40" deep. Ideal for cable, conduit, small pipe. Highly mobile. Varidraulic drive gives finger-tip control of crowding speeds from 0 to 20' per min. Exceptionally rugged.

58-7-D

Write for information on all ditchers in the Barber-Greene line of advanced design.

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CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

Labor Reform Dies

Kennedy-Ives bill is voted down by House

A strong coalition of Republicans and southern Democrats this week voted down the Senate-passed Kennedy-Ives bill, killing all chance for a labor reform bill in the 85th Congress.

The vote was 190 for the bill, 198 against. Under the procedure House leaders used to force a vote, the bill needed a two-thirds majority to pass. The fact it failed to get even a simple majority demonstrates the widespread dissatisfaction with the limited scope of the Senate bill.

House proponents of the bill argued it was better to take something than to go home with nothing at all. But 137 Republicans and 61 Democrats, in a hectic session, chose to go home with nothing. Business groups strongly opposed the bill, as not going far enough to crack down on unions and because of a provision requiring employers to report expenditures to influence employees in labor matters.

The House vote was the last chance for Congress to pass a law to curb labor rackets. The House Labor Committee last week refused to take up either the Senate bill or a stiffer substitute proposed by Rep. Carroll Kearns (R.-Pa.). In this situation, House Speaker Sam Rayburn had the Kennedy-Ives bill brought up under an all-or-nothing procedure, allowing only 40 minutes debate and no amendments.

Meanwhile, chances remain good for Senate-House passage of legislation setting up welfare fund reports. Senate-House conferees have worked out a compromise between bills passed by each body. The compromise follows the more lenient House version, leaving enforcement up to employees rather than to the Secretary of Labor.

If approved by both houses, the compromise would require reports from administrators of welfare plans and employee pension plans, at the request of employees. Plans covering 25 or less employees would be exempt from the reporting requirements.

Six States Will Vote On Right-to-Work Laws

Right-to-work advocates in Ohio have obtained enough popular support to place the right-to-work issue on the November election ballot. This makes Ohio the sixth state in which right-to-work laws will be a major political issue this fall.

The Ohioans for Right to Work have obtained 465,180 signatures on petitions, while only 345,209 signatures were necessary.

Right-to-work laws now ban the union shop in 18 states and are bitterly opposed by the building trades unions. Labor feels that the union shop should be left to free collective bargaining as it is under federal law.

One of the effects of imposing a compulsory open shop, for example, is to nullify completely the pending proposal in the Kennedy-Ives bill to legalize the pre-hire contract in the construction industry.

Although the unions are fighting the right-to-work movement at the state level, their ultimate goal is a Taft-Hartley Act amendment taking away from states the right to pass such laws.

The other states in which the issue will come before the voters in November are California, Colorado, Idaho, Kansas and Washington.

Contempt Citation Voted For Carpenter Official

Maurice Hutcheson, general president of the carpenters union, and 12 other persons were cited for contempt of Congress this week by the U. S. Senate. The cases will be sent to the Justice Department.

The citation is based on Mr. Hutcheson's refusal as a witness to answer McClellan committee questions "concerning the possible misuse of union funds."

Mr. Hutcheson did not invoke the Fifth Amendment—which might have placed him in violation of the AFL-CIO Ethical Practices Codes. Instead, he questioned the jurisdiction of the committee and contended that the inquiry was prejudicial to his legal rights in a still pending Indiana land case.

This is one of the problems that may be considered this week by the AFL-CIO, when its Executive Council meets in Forest Park, Pa. The results may have a direct bearing on the AFL-CIO's attempt to isolate the expelled teamsters union from the federation affiliates.

Worker Gets Compensation While on Paid Vacation

An injured worker can receive vacation pay without prejudicing his right to workmen's compensation benefits during the same period—at least in Wisconsin.

The State Industrial Commission has ruled that a worker drawing temporary total disability payments is entitled to those benefits even during the two week period of his paid vacation.

The vacation pay, the commission said, was not earned during that period.

OFFICIAL PROPOSALS

Bids: September 2, 1958.

Contract LT-190.002

THE PORT OF NEW YORK AUTHORITY
LINCOLN TUNNEL
EXTENSION OF LINCOLN TUNNEL PARKING AREA IN NORTH BERGEN

Sealed proposals for the construction of an extension of the Lincoln Tunnel Parking area in North Bergen, New Jersey, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, September 2, 1958 at which time said proposals will be opened and read in Room 1108.

Contract Documents may be seen at the office of the Engineer of Design of the Authority, Room 1115, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, August 21, 1958

Bids: September 4, 1958.

Erie County Water Authority

Notice is hereby given that sealed bids will be received in accordance with the law by the Erie County Water Authority until 10:30 o'clock A.M. Eastern Daylight Saving Time on the fourth day of September, 1958 at the office of the Authority, 338 Ellicott Square Building, Buffalo 3, New York, for furnishing materials and performing the labor for constructing the intake and intake tunnel for the Sturgeon Point Filtration Plant at Sturgeon Point, Town of Evans, Erie County, New York, all in accordance with plans and specifications prepared by Buck, Seifert and Jost, Consulting Engineers, 112 East 19th Street, New York 3, New York.

Copies of the plans and specifications may be examined without charge at the office of the Erie County Water Authority or at the office of the Consulting Engineers. Copies thereof may be obtained at either office upon deposit of Thirty ($30.00) Dollars, which sum will be refunded upon return of the plans and specifications in good condition within thirty (30) days after the date on which bids are received or else the entire deposit will be forfeited.

The work to be done includes furnishing all materials and labor, tools, plant and equipment necessary for constructing complete a water supply tunnel approximately three thousand (3,000') feet long extending beneath Lake Erie, a timber intake crib with an intake shaft at the Lake end, a combined intake shaft and distribution chamber for the low lift pumping station at the shore end for performing the excavation for the low lift pumping station.

Each proposal must be accompanied by a certified check payable to the Erie County Water Authority or a bid bond to the favor of the Authority from a reliable surety company authorized to do business in the state of New York and satisfactory to the Authority, in amount equal to ten (10%) percent of the proposal. The certified check will be retained to pay for any damage or loss to the Authority, or the liability bond will accrue, in case the successful bidder shall neglect or refuse to enter into a contract in accordance with his proposal.

The Authority reserves the right to consider bids for forty-five (45) days after their receipt before awarding any contract and the right is reserved to accept any bid or to reject any or all of them.

The Authority has submitted applications for permits to construct the project to various Federal and State Authorities having jurisdiction and the Contract will not be executed by the Authority until these permits are issued.

ERIE COUNTY WATER AUTHORITY
By: WILLIAM J. CARNEY
Secretary

Buck, Seifert and Jost
Consuling Engineers
Dated: August 14, 1958

OFFICIAL PROPOSALS

Bids: October 15, 1958.

Notice of Letting of Drain Contract

FOR THE INSTALLATION OF TWO MOTOR DRIVEN STORM WATER PUMPING UNITS, TIDE WATER GATES AND ELECTRICAL WORK FOR THE WYANDOTTE PUMPING STATION, IN THE WAYNE COUNTY DRAINAGE DISTRICT NO. 5, AS RECENTLY CONSOLIDATED, ECORSE TOWNSHIP AND CITY OF WYANDOTTE, WAYNE COUNTY, MICHIGAN.

NOTICE IS HEREBY GIVEN, That I, HENRY V. HERRICK, County Drain Commissioner for the County of Wayne, State of Michigan, will now and until 2:00 P.M., E.S.T. on Wednesday, the 15th Day of October, A.D. 1958, receive sealed bids for the INSTALLATION OF TWO MOTOR DRIVEN STORM WATER PUMPING UNITS, TIDE WATER GATES AND ELECTRICAL WORK FOR THE WYANDOTTE PUMPING STATION, for the WAYNE COUNTY DRAINAGE DISTRICT NO. 5 DRAIN, as recently consolidated, in the Township of Ecorse and the City of Wyandotte, in said County, in the Office of the Wayne County Drain Commissioner, 3523 Cadillac Tower, Detroit 26, Michigan, at which time bids will be publicly opened and read by Mr. Henry V. Herrick, the Wayne County Drain Commissioner.

Said project is divided into THREE (3) SECTIONS. Contracts will be awarded separately for each section.

SECTION I—For furnishing, delivering and installing complete as herein specified, ready for operation, two (2) motor driven pumping units complete with pumps, electric motors and starting equipment, and the necessary piping and auxiliary equipment, within the existing Wyandotte Pumping Station at Central and Negaunee Avenues, in the City of Wyandotte, Michigan.

SECTION II—For furnishing, delivering and installing all electrical wiring and equipment required to connect the equipment furnished under Section I to the existing electrical system and all revisions to the existing Primary Room in the Wandotte Pumping Station.

SECTION III—For furnishing, delivering and installing the six discharge box tide gates and frames.

Said job will be let in accordance with plans now on file with the other papers pertaining to said Drain, in the Office of the County Drain Commissioner for the County of Wayne, to which reference may be had by all parties interested, and bids will be made and received accordingly. Contracts will be made for each section with the lowest responsible bidder giving adequate security for the performance of the work, reserving to myself the right to reject any or all bids, waive any irregularities in bidding, and/or to adjourn such letting to such time and place as I shall publicly announce.

The Drain Commissioner shall have the right to hold all bids for a period of one hundred and twenty (120) days after the opening thereof. No bidder shall have the right to withdraw his bid during such time.

The Drain Commission, shall, within the period of 120 days herein provided for the holding of bids, obtain the approval of the Wayne County Board of Auditors to the letting of the contract to the lowest responsible bidder, and shall notify such bidder of his award of the contract. The Drain Commissioner shall be given 120 days from the date of receipt of bids to sell bonds in an amount sufficient to pay for this project, it being understood that if the Drain Commissioner shall not have marketed bonds in an amount sufficient to pay for this project within such 120 day period, no contract shall be executed. If within such 120 day period the Drain Commissioner shall successfully sell bonds in an amount to pay for the project, the Drain Commissioner shall forthwith notify the successful bidder of such sale and an agreement awarding the contract to the successful bidder shall be executed within ten (10) days from the date of notice of the sale of bonds. The bid, of the successful bidder, and the bond securing the same, shall remain in full force and effect until the contract is executed. If the bonds hereinbefore required to be sold are not marketed within the period provided above, or notice of such sale is not given by the Drain Commissioner to the successful bidder within the specified time, the bid shall be deemed to be null and void and successful bidder.

The 120 day period provided above for the sale of bonds and the giving of notice thereof may be extended from time to time by mutual agreement between the successful bidder and the Drain Commissioner.

The successful bidder shall not be required to execute performance bond, material lien bond, or provide the insurance herein otherwise required until he shall first have been notified of the sale of the bonds by the Drain Commissioner, and upon receipt of such notice, the successful bidder shall be required to execute and deposit such bonds and insurance as are required by the terms of the contract at the time of the execution thereof.

Copies of the plans and specifications may be secured from the Office of the Drain Commissioner of the County of Wayne, Michigan at 3523 Cadillac Tower, Detroit 26, Michigan. A deposit of Twenty-Five Dollars ($25.00), CHECK ONLY, will be required on each set of plans, which will be refunded upon their return in good order within ten (10) days after the opening of bids.

Any person desiring to bid on the above mentioned work will be required to deposit with the County Drain Commissioner a certified check or bank draft payable to the Wayne County Drain Commissioner, or a satisfactory bid bond executed by the bidder and a surety company, in an amount equal to five percent (5%) of the bid, shall be submitted with each bid. No bid may be withdrawn for at least thirty (30) days after the scheduled closing time for receiving bids.

The payments for the above mentioned work will be made as follows: IN CASH, FROM THE RECEIPTS OF THE SALE OF BONDS. Contractor may draw up to 80% of work completed from time to time and upon the approval of the Engineer.

Taxes will be spread in Twenty (20) Installments. First Installment, December 1959.

Dated this 8th Day of August, A.D. 1958.

HENRY V. HERRICK,
Wayne County Drain Commissioner.

Bids: September 12, 1958.

Port Reading Grade Crossing Elimination Project

WOODBRIDGE-CARTERET ROAD
TOWNSHIP OF WOODBRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSY
THE CENTRAL RAILROAD COMPANY OF NEW JERSEY
UNDER ORDER OF THE PUBLIC UTILITY COMMISSION, STATE OF NEW JERSEY

Sealed proposals will be received by The Central Railroad Company of New Jersey, at the Office of the Chief Engineer, located at Jersey City Terminal, Room 44, Foot of Johnston Avenue, Jersey City, New Jersey, until 1:00 P.M. D.S.T., on Friday, September 12, 1958, and publicly read at that time, for the:

Construction of a bridge and approaches to carry the Woodbridge-Carteret Road over the two Main Line tracks of The Central Railroad Company of New Jersey, a bridge and approaches to carry the Woodbridge-Carteret Road over the two Main Line tracks and one Wye track of the Port Reading Railroad, storm drainage system for roadways and grounds, and related street changes.

Principal Quantities Involved:

93,550 cu. yds.	Embankment fill
3,710 cu. yds.	Roadway excavation
11,050 sq. yds.	6" sub-base Class "A" road gravel
10,400 sq. yds.	Top soiling
11,050 sq. yds	6" macadam base course
2,880 tons	Bituminous concrete surface course hot-mixed
1,360 cu. yds.	Class "A" concrete
1,080 cu. yds.	Class "B" concrete
340,500 lbs.	Reintorcement steel
953,200 lbs.	Structural steel
7,460 lin. ft.	Steel bearing piles
9 each	Catch basins
3,240 lin. ft.	6" concrete curbs
3,750 lin. ft.	8" concrete curbs
250 lin. ft.	Concrete headers
2,890 sq. yds.	4" concrete sidewalks
1,690 lin. ft.	R.C. pipe
3,368 cu. ft.	Concrete crib walls
4,110 lin. ft.	Wire rope fence
Lump Sum	Demolition of Buildings

Proposals forms, drawings, specifications, and the bid deposit shall be returned to the bond and insurance requirements may be obtained upon application at the Office of the Chief Engineer of the Railroad Company, at the above address, on or after August 18, 1958, by depositing $25.00 per set. A refund in full will be made to bidders upon return of each set in good condition within 30 days of award or rejection of bids.

This work will be awarded as a general contract and the successful bidder will be required to perform with his own organization not less than 80% of the total value of the contract, except for materials or items of work which require specialized knowledge, craftsmanship or equipment not ordinarily available in the contractor's organization.

Bids must be made upon the standard proposal forms furnished for this purpose by the Railroad Company and must be enclosed in sealed addressed envelopes bearing, on the outside, the name and address of the bidder and the contract work bid upon, and must be accompanied by a certified check drawn to the order of the Treasurer of The Central Railroad Company of New Jersey, in the amount of $15,000. Bids and checks not enclosed in sealed addressed envelopes will be considered informal and will not be opened.

The Railroad Company and/or the Board of Public Utility Commissioners reserve the right to reject any or all proposals.

R. J. Minetti, Chief Engineer
THE CENTRAL RAILROAD COMPANY OF NEW JERSEY
JERSEY CITY TERMINAL, JERSEY CITY 2, N. J.

Bids: September 4, 1958.

New Jersey Turnpike Authority

CONTRACT NO. R-14

Proposals are invited for Contract No. R-14 which involves the repainting of the superstructure steelwork for nine (9) bridges along the New Jersey Turnpike between Interchange 9 and Interchange 18, in Middlesex Union, Essex, Hudson and Bergen Counties, New Jersey.

Repainting shall consist of the application of one (1) finish coat of paint to the surfaces of all steelwork in addition to initial cleaning and spot painting in areas where the original coat or coats of paint are not in satisfactory condition. The approximate tonnage of superstructure steelwork to be repainted is 13,282 tons.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock, Eastern Daylight Saving Time on the morning of September 4, 1958, at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours on or after August 18, 1958, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 99 Church Street, New York 7, New York. Contract documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Joseph Morecraft, Jr., Chairman
August 11, 1958

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5093) will be received at Ephrata, Washington until September 18, 1958, for furnishing labor and materials for earthwork and structures, Block 82, laterals, wasteways, and drains, Royal Branch Canal Laterals, Columbia Basin Project, Washington. Location east of Vantage, Washington. Principal items are 1,060,000 cu. yds. excavation; 140,000 cu. yds. earth lining of laterals; 2,300 cu. yds. concrete in structures; 1,490 lin. ft. corrugated-metal pipe; 14,440 lin. ft. concrete pipe; and other work. Completion time 520 days. For particulars, address Bureau of Reclamation, Ephrata, Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: September 9, 1958.

Project No. NY-1-3

The Syracuse Housing Authority will receive separate sealed bids for the following contracts for work to be done in connection with the Project No. NY-1-3, situated in Syracuse, New York:

CONTRACT NO. 1
GENERAL CONSTRUCTION WORK
CONTRACT NO. 2
PLUMBING AND KINDRED WORK
CONTRACT NO. 3
HEATING WORK
CONTRACT NO. 4
ELECTRICAL WORK

until 2:00 o'clock P.M., Eastern Daylight Saving Time, Sept. 9th, 1958, in the COMMON COUNCIL CHAMBERS, CITY HALL, SYRACUSE, NEW YORK, at which time and place all bids will be publicly opened and read aloud, if two or more bids are received. If only one bid is received for any contract it will be returned unopened.

The work in connection with this Project includes generally, the construction of two nine (9) story and basement apartment buildings containing 172 apartments, and also construction of four row house buildings containing 22 apartments.

Complete plumbing, heating and electrical work, utilities and site improvements will be included. The demolition of all existing structures has been completed.

A separate contract for lawns and planting will be let at a later date.

Proposed Forms of Contract Documents, including Drawings and Specifications are on file at the office of the Syracuse Housing Authority, and at the office of the Architect, Fred B. O'Connor, 1221 Chimes Building, Syracuse, N. Y., and at the following offices:

F. W. Dodge Corporation
119 W. 40th St., New York 18, N. Y.
F. W. Dodge Corporation
70 Niagara St., Buffalo 5, N. Y.
Rochester Builder's Exchange
135 Spring St., Rochester, N. Y.
Brown's Letters, Inc.
101 Park Ave., New York, N. Y.
Dow Service
420 Lexington Ave., New York, N. Y.

Copies of the Documents may be obtained on or after Monday, August 11th, 1958, from the Syracuse Housing Authority by depositing $40.00 for each set of documents so obtained. The amount of the deposit will be refunded to those who return the Documents in good condition within ten (10) days after the opening of Bids.

A certified check or bank draft payable to the Syracuse Housing Authority, U. S. Government Bonds or a satisfactory bid bond executed by the bidder and a surety company in an amount not less than five per cent (5%) of the bid shall be submitted with each bid.

The Syracuse Housing Authority reserves the right to reject any or all bids and to waive any informalities in bidding.

No bid shall be withdrawn for a period of forty-five (45) days subsequent to the opening of the bids without the consent of the Syracuse Housing Authority.

The successful bidders will be required to furnish and pay for satisfactory performance and payment bonds.

Attention is called to the fact that not less than the minimum salaries and wages as set forth in the specifications must be paid on this Project.

SYRACUSE HOUSING AUTHORITY
Jacob C. Lattif, Chairman

August 7, 1958.

Bids: August 28, 1958.

Contract B. P. 58-66
Town of Riverhead, New York

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Public Building Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T., August 28, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Contract B. P. 58-66 for
Beach Protection (Two Stone Groins)
at Wading River Beach, Town of
Riverhead, Suffolk County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract B.P. 58-66 may be examined and obtained at the office of Mr. Milton E. Goul, 325 West Main Street, Babylon, L. I., New York.

The deposit for Plans and Proposal Forms for Contract B.P. 58-66 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract B.P. 58-66 is $65,000.00.

Proposals for Contract B.P. 58-66 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the State of New York, Commissioner of Taxation and Finance for the sum of $2,500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Public Building Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: September 11, 1958.

Commonwealth of Pennsylvania
Department of Mines
and Mineral Industries
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Department of Mines and Mineral Industries, Main Capitol Building, Harrisburg, Pennsylvania, until 11:00 A.M. Eastern Daylight Saving Time, the 11th September, 1958, at which time and place they will be opened publicly and read aloud, for the following:

Furnishing all labor, equipment and materials to install two (2) deep well pumps, motors, power substation and control as purchased and furnished under Flood Control Project No. 5, Phase "A", and also to supply and install structural steel, fence, discharge piping, fittings, grading material, pole line, concrete and other materials, and to remove certain structures and materials now installed.

Location of the project—Greenwood No. 10 Shaft, Greenwood Colliery, Lehigh Coal and Navigation Company, Coaldale Borough, Schuylkill County, Pennsylvania.

This project is one to the cost of which the United States Government may contribute under Public Law 162, 84th Congress (69 Stat. 352) and is subject to the terms of that Law, as well as to Act No. 82, July 7, 1955, Commonwealth of Pennsylvania, and to the "Procedures for Administration of the Act of July 15, 1955, to provide for the Conservation of Anthracite Coal Resources Through Measures for Flood Control and Anthracite Mine Drainage, (Public Law 162, 84th Congress, 69 Stat. 352)", and to the State-Federal Contribution Contract for Flood Control Contract No. 5, Phase "B". The Commonwealth's acceptance of and liability arising out of any bid shall be subject to contribution by the United States Government under the provisions of said Contribution Contract.

Prospective bidders may obtain Specifications, Proposal Form and Contract from Deputy Secretary, Department of Mines and Mineral Industries, Anthracite Institute Building, 237 Old River Road, Wilkes-Barre, Pennsylvania, upon request.

Joseph T. Kennedy
Secretary of Mines and Mineral Industries

Bids: September 2, 1958.

Contract O&M-495

THE PORT OF NEW YORK AUTHORITY
U. S. NAVAL INDUSTRIAL RESERVE SHIPYARDS
PORT NEWARK
FURNISH AND INSTALL ONE LOW PRESSURE STEAM BOILER IN BUILDING 20

Sealed proposals for furnishing all labor, material and equipment for removing of existing boiler and furnishing and installing one low pressure steam boiler and associated equipment in Building 20 will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Avenue, New York 11, New York, until 11:00 A.M., Tuesday, September 2, 1958, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt will be issued. The receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of Proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 12, 1958

Bids: September 18, 1958.

NOTICE TO CONTRACTORS

Eight Mile Road Storm Drain
Oakland County, Michigan

EIGHT MILE ROAD STORM DRAIN
OAKLAND COUNTY, MICHIGAN

Sealed proposals for the construction of the eight mile road storm drain, located in the City of Southfield and the City of Oak Park, Oakland County, Michigan, will be received at the office of Daniel W. Barry, Oakland County Drain Commissioner, 550 South Telegraph Road, Pontiac, Michigan, until 2:00 P.M., September 18, 1958, at which time and place they will be immediately opened and publicly read.

The quantities involved in this work consist principally of the following:

111 Lineal feet 12'—0" open cut storm drain
13,103 Lineal feet 12'—0" tunnel storm drain
2,648 Lineal feet 10'—0" tunnel storm drain
1,740 Lineal feet 9'—0" tunnel storm drain
990 Lineal feet 6'—6" tunnel storm drain
136 Lineal feet 3'—6" tunnel storm drain
304 Lineal feet 3'—6" open cut storm drain
13 each manholes
2 each junction chambers
6 each drop inlets

Plan and specifications may be obtained at the office of Daniel W. Barry, Oakland County Drain Commissioner, 550 South Telegraph Road, Pontiac, Michigan, upon a deposit of fifteen dollars ($15.00) per set. This deposit will be refunded upon the return of the set within ten days (10) of the date of the bid opening.

Each bid shall be accompanied by a certified or cashiers check or bid bond, payable to Daniel W. Barry, Drain Commission, Oakland County, Michigan, for the sum of five per cent (5%) of the bid.

The Drain Commissioner reserves the right to reject any or all bids and to waive any defects in bids provided they are to the benefit of the Drainage District.

Daniel W. Barry,
Oakland County Drain Commissioner.

BIDS: September 2, 1958.

Contract O&M-403

THE PORT OF NEW YORK AUTHORITY
BOOKLYN-PORT AUTHORITY PIERS

Sealed proposals for furnishing all labor, material and equipment for the installation of a steam boiler in the Administration Building at the Brooklyn-Port Authority Piers will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Avenue, New York 11, New York, until 10:00 A.M., Tuesday, September 2, 1958, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.000 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt will be issued. The receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 12, 1958

OFFICIAL PROPOSALS

Bids: August 28, 1958

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 28th day of August 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany 1, New York						
Greene (Rte. 385)	FARC 58-117	Catskill Athens, S.H. 5367 Project DF 365(7)	1.14	Asph. Conc. = 0.99 Mi. Misc. Work = 0.15 Mi.	$16,000 Plans $2	$300,000
Greene (Rte. 214)	FARC 58-101	Phoenicia Stoney Clove Pt. 2, FASSH 47-9 Phoenicia Stoney Clove Pt. 4, FASSH 50-12 Project DS 937(5)	4.47	Asphalt Concrete	$11,000 Plans $2	208,000
Warren (Rte. 28)	FARC 58-112	Warrensburgh Glen S.H. 8185 Glen Wevertown S.H. 1963 Project DF 757(3)	0.45	Asph. Conc. = 0.41 Mi. Misc. Work = 0.04 Mi. Plate Girder Br. 360'	$26,000 Plans $3	464,000
DISTRICT No. 3, Earle E. Towlson, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Onondaga (Rtes. 31 & 298)	FARC 58-56	Cicero South Bay, S.H. 452 Cicero Bridgeport, S.H. 9084 Syracuse Bridgeport, S.H. 1072 Project DF 1035(2)	7.85	Asph. Conc. Ty. 1A	$45,000 Plans $3	806,000
Onondaga (Rte. 298)	FARC 58-113	Syracuse Bridgeport, Pt. 1, New Court Rd. S.H. 672 A Project DU 994(6)	0.65	9" Cem. Conc. Pavt. = 0.63 Mi. Misc. Work = 0.02 Mi.	$18,000 Plans $2	324,000
Oswego (Rte. 11)	FARC 58-111	Syracuse-Watertown, S.H. 278 Project DF 463(18)	2.38	Asph. Conc. Ty. 1A	$14,000 Plans $2	255,000
DISTRICT No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Livingston (Rte. 36)	FARC 58-109	County Line Dansville, S.H. 5398 Project DF 579(7)	1.51	Asph. Conc. = 1.49 Mi. Misc. Work = 0.02 Mi.	$10,000 Plans $2	173,000
Monroe & Orleans (Rtes. 18, 272, 33 & 31)	RC 58-114	Br. No. 4, S.H. 8322, Br. No. 2, S.H. 398, Br. No. 1, S.H. 83 Br. No. 1, S.H. 253	....	Clean. & Paint. 4 Brs.	$1,100 Plans $2	20,000
Monroe & Orleans (Rte. 31)	FARC 58-119	Holley Brockport, Pts. 1 & 2 S.H. 5421-5425 Project F 1037(3)	1.14 (0.29 Acc.)	9" Cem. Conc. Pavt. 24' Wide = 1.07 Mi. Asph. Con. (Acc.) = 0.29 Mi. Misc. Work = 0.07 Mi. Comp. Girder Br. 321'	$40,000 Full Size Plans $15	716,000
DISTRICT No. 5, E. G. H. Youngmann, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Erie (Rte. 20)	FARC 58-105	South Western Blvd., S.H. 9269 Project DF 1079(7)	3.11	Asphalt Concrete	$35,000 Plans $2	611,000
Erie	PSC 15215 FINTC 58-4	Inter. Route No. 506, New York State Thru. Niagara Sect. (Michigan Ave. Viaduct-City of Buffalo) Michigan Ave. Viaduct—Over N. Y. Central R. R. Project I 865(18)	0.20 (0.06 Acc.)	Asph. Conc. Ty. 2A = 0.15 Mi. Br. Pavt. = 0.11 Mi. RR Sep. W.F. Comp. Beam 604.6'	$60,000 Full Size Plans $15	1,104,000
Erie (Rte.5)	FAC 58-14 FAC 58-15	City of Lackawanna: Arterial Rt. Fuhrmann Blvd.-Hamburg Turnpike Viaduct (North City Line & Ridge Road) City of Buffalo: Arterial Rt. Fuhrmann Blvd.-Hamburg Turnpike Viaduct (Tift St.-South City Line) Project U 750(14)	1.77 (1.45 Acc.)	Asph. Conc. Ty. 2A (Appr.) = 0.67 Mi. Cem. Conc. Pavt. (Viaduct) = 1.08 Mi. Misc. Work = 0.02 Mi. Asph. Conc. (Acc.) = 1.45 Mi. Viaduct Decking	$190,000 Plans $10	3,266,000
DISTRICT No. 6, James H. Thomas, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Yates (Rte. 14)	FARC 58-115	Starkey-Dresden, Pt. 2, S.H. 8353 Project DF 505(8)	....	Transplanting Trees	$2,200 Plans $5	40,000
DISTRICT No. 7, Robert W. Sweet, District Engineer, 444 Van Duzee Street, Watertown, New York						
Jefferson (Rte. 12F)	FARC 58-110	Cape Vincent-Watertown, Part 3, S.H. 1182 Project DF 565(5)	3.40	Asph. Conc. = 3.34 Mi. Misc. Work = 0.06 Mi.	$30,000 Plans $3	555,000
DISTRICT No. 8, Kurt G. Rauer, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Orange (Rte. 17K)	FARC 58-116	Bloomingburgh-Bullville, S.H. 8166 Mont-Bullville, Part 2 & 1, S.H. 1618-576 Project DF 483(4)	10.00	Asph. Conc. 2RC Twin Box Brs. 23.1' & 21'	$78,000 Plans $5	1,414,000
ULSTER (Rte. 9W)	FARC 58-107	East Chester Street Extension S.H. 9360 Project DF 857(3)	1.44	Asphalt Concrete	$12,000 Plans $2	216,000
DISTRICT No. 9, Joseph C. Frederick, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rtes 17 & 7)	RC 58-106	Binghamton City: Vestal Ave. By Pass FAC 49-8; Binghamton City: Court St.-Rte. 17 Conn. (Susquehanna River Br.) FAC 54-17; City of Binghamton: Brandywine Ave. Ext. (Art. Rte.) FAC 52-3: Brandywine Ave. Ext. FASH 52-8 and Brandywine Ave. Ext., Pt. 2 (North Chenango St. Interseect.) FASH 55-4	....	Landscaping and Misc. Work	$5,000 Full Size Plans $10	86,000
DISTRICT No. 10, M. E. Goul, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx	FIMDE 58-1	Inter. Route Conn. No. 512 Major Deegan Expressway (Cont. 1) (Park Ave. to St. Ann's Ave.) Project I 1082(25)	1.05 (27,200 S.Y. Acc.)	9" Cem. Conc. Pavt. (Carb. Black) 2 @ 39' Wide = 0.81 Mi. Misc. Work = 0.24 Mi. 23,000 S.Y. Sheet Asph. Pavt. & 4,200 S.Y. Cem. Conc. Pavt. (Acc.) Hy. Sep. Comp. I Beam 112" Widen 3 Exist. Hy. Seps. 455.2' Pl Gird., 106.5' St. Rig. Frame and 79.6' R.C. Rig. Frame New Ramp and Alter. Exist. Ped. Overpass	$300,000 Plans $20	5,360,000
Bronx	FIBE 58-4	Inter. Route Conn. No. 516 Bruckner Expressway (Sect. L Cont. 1) (St. Ann's Ave. to East 141st St.) Project I C 1286(7)	0.63	9" Cem. Conc. Pavt. 2 @ 37.5' Var. Wide (Including Exp. Struct. Surf. Paving Lighting, Drainage & Misc. Work)	$650,000 Plans $20	12,417,000
Nassau (Rte. 27)	FARC 58-118-SS 58-9	Conduit Blvd. Pt. 3, S.H. 1699A, Merrick Rd. Project U 947(15)	0.94	Directional Signs & Lampposts	$5,100 Plans $2	92,000
Richmond	FICLE 58-1	Inter. Route Conn. No. 512 Clove Lakes Expressway (Cont. 1) (McKinley St. to Fingerboard Rd.) Project I 1066(25)	6.62	Demolition of Bldgs.	$19,000 Plans $3	346,000
Suffolk (Rte. 27)	FASH 58-6	Sunrise Highway Ext. (Yaphank Ave. to Uptown Blvd.) Cont. 2 Project DF DU 947(14)	2.56 (5.00 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Wide = 2.34 Mi. Asph. Conc. = 0.12 Mi. Misc. Work = 0.10 Mi. Acc. Cnc. Conc. Pavt. 1.90 Mi. & Asph. Conc. 3.10 Mi. Hy. Sep. Comp. Girder 233.8'	$168,000 Plans $10	3,043,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: September 9, 1958.

Office of the Director of the Department of Public Works of the City of Newark, New Jersey

City Hall, Newark, N. J.
Date: August 12, 1958

Job No. 4166 Division of Water Supply

Sealed Proposals will be received at 10:30 A.M. Eastern Daylight Saving Time on Tuesday, September 9, 1958, by the Director of the Department of Public Works in Room 309, City Hall, Newark, New Jersey, and then and there at 10:00 A.M. publicly opened and read for the following work which is a part of the Charlotteburg Reservoir Project:

CONSTRUCTING CHEMICAL BUILDING, SUPERSTRUCTURES OF AERATOR DISTRIBUTION CHAMBER AND SCREEN CHAMBER, AERATOR, ACCESS BRIDGE, AND RELATED WORK, which is divided into five (5) Concurrent Contracts, as follows:

CONTRACT NO. CRP-6
GENERAL CONSTRUCTION
CONTRACT NO. CRP-6A
STRUCTURAL STEEL
CONTRACT NO. CRP-6B
PLUMBING WORK
CONTRACT NO. CRP-6C
HEATING, VENTILATING AND AIR CONDITIONING WORK
CONTRACT NO: CRP-6D
ELECTRICAL WORK

The work under each Concurrent Contract includes, but is not limited to the following:

CONTRACT CRP-6 GENERAL CONSTRUCTION: This Contract consists of the following principal parts:

(a) General Construction of Chemical Building: A two story masonry structure on a structural steel frame, approximately 55 feet by 90 feet in plan, surmounted by a center tower approximately 42 feet by 43 feet in plan and about 75 feet high, and supported on a reinforced concrete substructure. Operating equipment will be provided as described in the Specifications.

(b) General Construction of Aerator Distribution Chamber Superstructure: A masonry superstructure approximately 31 feet by 34 feet in plan, on an existing reinforced concrete substructure.

(c) General Construction of Screen Chamber Superstructure: A masonry superstructure approximately 46 feet by 70 feet in plan, on an existing reinforced concrete substructure.

(d) Construction of Aerator: A reinforced concrete aerator basin approximately 96 feet by 186 feet inside plan dimensions, including pipes, leaders, nozzles and other equipment, as described in the Specifications.

(e) Construction of Access Bridge: A structural steel footbridge with a reinforced concrete deck, supported by reinforced concrete abutments and piers.

(f) Related Work: Construction of an access road, concrete stepped ramp walk, concrete cribbing, railroad siding yard and other miscellaneous work, as described in the Specifications.

CONTRACT CRP-6A STRUCTURAL STEEL WORK: This Contract consists of furnishing and erecting structural steel, including lintels, joists, monorails, bins, etc., for the various structures, as described in the Specifications.

CONTRACT CRP-6B PLUMBING WORK: This Contract consists of furnishing and installing a plumbing system in the Chemical Building and storm water drainage systems for the Screen Chamber and the Aerator Distribution Chamber.

CONTRACT CRP-6C HEATING, VENTILATING AND AIR CONDITIONING WORK: This Contract consists of furnishing and installing a heating and ventilating system and an air conditioning system in the Chemical Building, and heating systems in the Aerator Distribution and Screen Chambers. The right is reserved to eliminate from this Contract the air conditioning system for the Chemical Building.

CONTRACT CRP-6D ELECTRICAL WORK: This Contract consists of furnishing and installing all electrical work, except equipment specifically provided for in Concurrent Contracts CRP-6, CRP-6B and CRP-6C and includes connecting to the electrical system all equipment, whether provided under this or the other Concurrent Contracts.

BIDDERS MAY BID ON ANY OR ALL CONTRACTS

The Drawings, Specifications, Instructions and Information for Bidders, the Bid or Proposal, Contract and Bond forms are on file and may be seen at the office of the Division Engineer, Division of Water Supply, Department of Public Works, Room 101, City Hall Annex, Newark, and at the office of Parsons, Brinckerhoff, Hall & Macdonald, Engineers, Sanitary Department, 55 Broadway, New York, New York. Copies may be obtained at the office of Parsons, Brinckerhoff, Hall & Macdonald upon deposit of twenty-five dollars, which sum will be refunded upon return of the Drawings and Specifications in good condition, or upon submittal of a formal Bid.

An Agreement of Surety signed by a Surety Company authorized to do business in New Jersey shall accompany each Proposal for execution of Contract on award thereof. Said Agreement of Surety shall be in conformity with the requirements specified in Instructions and Information for Bidders.

Each Contract will be awarded to the lowest responsible bidder. The City reserves the right to reject any and all Bids or waive informalities therein.

All Proposals are subject to the requirements of all laws and City ordinances affecting same. The Bidder's attention is called to Section 2.58 of the City Administrative Code.

By direction of the Director of the Department of Public Works of The City of Newark.

George W. Andress
Director, Department of Public Works

Bids: September 11, 1958.

Power Authority of the State of New York

For the Furnishing and Delivery of Towers, Guides and Sills for Lewiston Power Plant and Conduit Outlet Stoplogs

Structure of Waterways
Specifications No. PA-N-23012
Niagara Contract No. NP24

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. destination, Niagara Falls, Niagara County, New York, of the towers, guides, and sills for the Lewiston Power Plant and conduit outlet stoplog structure of the waterways until 11:30 A.M., Eastern Daylight Saving Time on the 11th day of September, 1958, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be opened and read aloud.

The work consists of fabricating, furnishing and delivery thereof of approximately 2,530 tons of embedded structural steel towers, guides and sills for the draft tube gates, trash racks, stoplogs and intake gates for the Lewiston Power Plant, and head beams, guides and sills for the conduit outlet stoplog structure of the waterways.

Delivery of the above items will be required beginning February 1, 1959.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, at The Coliseum Tower, 18th Floor, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Ten Dollars ($10.00) per initial set of contract documents, and Five Dollars ($5.00) per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, and in the office of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee (certified check or bid bond) will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-5091) will be received at Denver, Colorado, until Stepmber 16, 1958, for furnishing two (2) 84-inch hollow-jet valves with valve support metalwork and one set of handling equipment for outlet works at Trinity Dam, Central Valley Project, California. Delivery is desired within 366 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• POSITIONS VACANT

Highway Engineers—Highway Engineers with a minimum of 3 years experience. Excellent opportunity with established consulting engineering firm in Middle West. P-7909, Engineering News-Record.

County Engineer Wanted: Require registered engineer with highway experience. For more information contact Guthrie County Board of Supervisors, Guthrie Center, Iowa.

General Superintendent—General Contractor with substantial volume throughout Michigan has opening for experienced young man to take charge of all field operations. State experience and references. P-8555, Engineering News-Record.

Civil Engineers—Company fabricating Reinforcing Steel, Steel Joists and Allied Products operating in Southeast has openings in Engineering Department for two graduates. Applicants be subject to intensive training for positions of responsibility. Must be hard working; ambitious, aggressive and have qualities of leadership, military obligation to be completed. Reply furnishing brief and complete resume of experience, recent photograph, availability and salary requirements. P-8577, Engineering News-Record.

Wanted: Construction Superintendents and Erectors for Boilers, Turbine Generators, Condensers and Auxiliary Power Plant Equipment. Applicants must have experience record with an erection contractor in responsible supervisory capacity. P-8631, Engineering News-Record.

Senior Engineer (2) for general municipal work. Starting salary $6750 with 5 yearly increments to $8250. Must have degree in Civil Engineering. Send resume of experience to City Manager, City Hall, Watertown, New York.

Opening for Civil Engineer with Soil Mechanics background. Occasional travel involved. Good opportunity with consulting firm specializing in soil and foundation engineering. Reply giving background and experience. P-8627, Engineering News-Record.

Experienced estimator with background in concrete structures, grouting, foundations and concrete design. Outstanding opportunity with nationwide contractor for aggressive, alert engineer. P-8623, Engineering News-Record.

Wanted Registered Architect with 4 or more years experience. Excellent opportunity with established consulting engineering firm in middle west. State education, background and experience. Reply to P-8615, Engineering News-Record.

Wanted Architectural Draftsman with 2 or more years experience. Excellent opportunity with established consulting engineering firm in middle west. State education, background and experience. Reply to P-8590, Engineering News-Record.

Wanted—Engineers to prepare plans and specifications for water works, sewers, water treatment plants, sewage treatment plants. State age, experience, references, salary expected, when can report. All correspondence confidential. Long term employment. P-8666, Engineering News-Record.

Maintenance Superintendent. Palm Springs, California. To supervise Street & building maintenance; 10 years varied experience in street & building maintenance, including supervision. Max. age 50 years; salary range $506-628 per month. Retirement plan; liberal vacation, etc. Apply Personnel, City Hall, Palm Springs.

Wanted: Graduate Civil Engineer for position of City Engineer for community of 26,000. Must have excellent character, integrity, conscientious attitude. Salary $6250 min—$7240 max. Preference given applicants with municipal and/or highway design experience. Give references, experience, and vital statistics. Apply Director of Public Works, Box 700, Gloucester, Mass.

(Continued on opposite page)

• POSITIONS VACANT

(Continued from opposite page)

Civil Engineer—experienced in design of sewers-sewerage treatment plant—New York State. Salary Open. P-8697, Engineering News-Record.

• POSITIONS WANTED

Project Manager or Superintendent for archi-tect or contractor available. Recently completed luxury type 325 room El San Juan Hotel. Working knowledge Spanish and French. Also experienced heavy construction and housing. Age 44, single. Airmail replies to: Allen McSherry, P. O. Box 1215, San Juan, Puerto Rico.

BSCE-33-PE-Presently project engineer on municipal paving and sewage for consultant. Desire Midwest location with city or consultant. PW-8546, Engineering News-Record.

Engineer—Over 15 yrs. exp. steel, concrete, and foundation design for oil refineries, railroads, bridges and buildings. Part or full time N. Y.-N. J. area. PW-8559, Engineering News-Record.

Construction manager or superintendent— twenty years experience power plants, pulp, steel and fuel plant construction. Foreign or domestic. Available immediately. PW-8558, Engineering News-Record.

Canadian citizen migrating to U. S. wishes to associate with general contractor in general construction. Has 10 years civil engineering experience and $15,000 capital to offer. Reply PW-8552, Engineering News-Record.

Available Sept 1st—Foreign or Domestic. Tunnel Supt., 45—24 yrs. Practical experience. Unlimited knowledge, all phases—tunnels, shaft's, caissons, penstocks, underground powerhouses, roofbolting, concrete, grouting, gunniteing, modern methods can get top production, 14 yrs one contractor, help estimate. Am not seeking chair job. Have good following—proof of ability, references and resume on request. PW-8578, Engineering News-Record.

Graduate Civil Engineer, 15 years extensive engineering, construction & executive experience wants opportunity with general contractor. Will invest if necessary. PW-8613, Engineering News-Record.

Engineer, Registered & Graduate in Civil, post graduate work in Structural. 8 yrs. experience in Civil, Structural, Architectural, Mechanical, and Electrical design & const. supervision. Partner & Chief Engineer of Arch. & Engin. Firm last 4 yrs. Resume on request. Box 635, Bethany, Okla.

Administrative CE, 35. All phases heavy construction. Estimating, design, contracts, etc. Intelligent, personable, conscientious. Desires position with future general contractor. New York Area. Minimum salary $10,000. PW-8652, Engineering News-Record.

Accountant-Controller, 15 yrs diversified experience in Heavy Construction, previous 4 yrs with CPA firm. PW-8620, Engineering News-Record.

Prestressed and Precast Concrete-Executive, now in Prestressed, with broad experience in top positions in General Contracting, who can plan, build, organize and operate Prestressed Plant, solicits inquiries from those requireing top man to handle large operation. Minimum Salary $20,000. PW-8618, Engineering News-Record.

General Estimator and Project Manager. Seven years experience in Commercial, Industrial, and Public construction. Presently located in Florida. PW-8625, Engineering News-Record.

Supt. or General Foreman—Age 43—over 18 years experience highway construction supervising earthmoving equipment—excavating, drainage. Know men, methods and cost. Available after Sept. 1st. A-1 references. PW-8646, Engineering News-Record.

Construction Controller—experienced finance and control multi-million dollar heavy construction projects. Thoroughly competent corporate accounting, reporting, costs, budgets, taxes, systems. Experienced all types contracts, corporate organizations, joint ventures. Knowledge French. PW-8683, Engineering News-Record.

Project or Office Manager; Engineering-Construction Industrial Plants, Housing, Airfields, Naval Bases, Resident Engineer Contract Manager, experience, foreign jobs considered. PW-8662, Engineering News-Record, 1125 W. 6th St., L. A. 17, Calif.

EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

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Subject to Agency Commission.

SEPT. 4 ISSUE CLOSES AUG. 22

UNDISPLAYED RATE:

$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take $\frac{1}{2}$ of above rate.

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Discount of 10% if full payment is made in advance for 4 consecutive insertions.

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Send NEW Ads and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.

MATERIALS ENGINEERS
for work in SOUTHEAST ASIA

Personnel needed to complete technical party. Work involves supervision of construction of highways and bridges in South Vietnam. Duties include instruction of on-the-job trainees. High degree of initiative, judgment and skill in handling human relations required in addition to professional competence. All personnel must be experienced and able to provide references. Eighteen-month minimum employment agreement. Only those interested in difficult and challenging work should apply.

Single status preferred, and preferably holding graduate degree and having extensive experience. Varied duties, including subsurface investigation, materials testing, and soils analysis.

For Application Blank Write to:

CAPITOL ENGINEERING CORPORATION

Consulting Engineers DILLSBURG, PENNSYLVANIA

CIVIL ENGINEERS

Highway Design **Hydraulics**
Bridge Design **Hydrology**

Qualified, experienced graduate civil engineers or others of equivalent background will find wide open opportunities with growing consulting firm. Top starting salaries, liberal fringe benefits, including generous profit-sharing plan, group insurance, paid holidays and vacations.

Company's work is diversified: highway, bridge, sewer, flood control, and heavy industrial design. Advanced office and field equipment, including electronic computer and Tellurometer. Chicago loop location.

JOHN F. MEISSNER ENGINEERS, INC.

300 West Washington Street
Chicago 6, Illinois

The Commonwealth of Pennsylvania Seeks

BRIDGE DESIGNERS

with C.E. degree and 1 to 5 years of bridge experience.

Expanding operations offer permanent positions for

• JUNIOR DESIGNERS • DESIGNERS • ASSISTANT SQUAD LEADERS

Salaries from $5500 to $8200 per year.

Plus Liberal Fringe Benefits

Send Complete resume to

PERSONNEL, PA. HWYS. DEPT., HARRISBURG, PA.

• POSITIONS WANTED

General Superintendent, 46, Broad experience in building construction, presently employed—interested in change. Thoroughly qualified and responsible at management level. PW-8663, Engineering News-Record.

Construction Supt.—Eng.; Wide experience in commercial, industrial, institutional, chemical and residential work and in heavy engineered construction. 20 years in field. Desire supervisory position with opportunity to evolve from job supervision to const. mgt. PW-8665, Engineering News-Record.

General Superintendent. Age 30, ambitious young man who has worked up from tradesman to present position desires equivalent position with chance for advancement. PW-8678, Engineering News-Record.

• POSITIONS WANTED

Soils and Foundations Engineer P.E., B.C.E., M.S. (Soils) 28, single, 8 years of soils, construction and structural design experience. Presently responsible for soils and foundation design in large engineering organization. Will relocate. PW-8671, Engineering News-Record.

Sewer Foreman, able and conscientious, experienced right-hand man, wants to join sewer contractor for permanent position. PW-8691, Engineering News-Record.

Prestressed Concrete Engineer—BSCE, MSCE, 31. Three years experience in design, manufacture, promotion, and sales of prestressed concrete products. PW-8693, Engineering News-Record.

(Continued on the following page)

PROJECT ENGINEERS

ELECTRICAL
Industrial - Commercial - Plant Lighting & Power Distribution

MECHANICAL
Heating, Ventilating & Air Conditioning - Plumbing - Power and Process Piping

STRUCTURAL
Steel and Concrete for Industrial, Commercial and Public Utilities Projects

- Persistant and expanding demand for our services permits
- us to add to
- our permanent staff
- several mature, well
- rounded engineers
- who have above
- average records
- of Professional
- accomplishment

Preference will be given to licensed Professional Engineers who have successful records of client liaison and negotiation, and are capable of follow-through on a wide variety of projects from inception through design and construction.

ANDERSON-NICHOLS & COMPANY

A Coordinated Engineering Service
150 Causeway Street, Boston 14, Massachusetts

ENGINEERING DESIGN PERSONNEL

For Work On Highway, Bridge, Water and Sewerage Projects
Openings in Pennsylvania, Ohio & West Virginia

Career opportunities for individuals interested in professional recognition, ample opportunity for advancement based on merit, plus employee retirement plan, group life insurance, hospitalization, paid vacation and holidays.

Mail Resume To F. W. AHERN, Personnel Director

MICHAEL BAKER, JR., INC.
Consulting Engineers
Baker Building — Phone SPruce 4-3010 — Rochester, Penna.

• POSITIONS WANTED
(Continued from preceding page)

Project Manager-Construction Superintendent. Multi Story heavy experience: apartments, hotels, hospitals, commercial. PW-8554, Engineering News-Record.

Latin American Assignment Wanted by capable contractors ass't. Grad. Eng. with 16 years experience and used to responsibility. PW-8661, Engineering News-Record.

Sewer Foreman with broad experience, cost conscious, right-minded; desires permanent connection with sewer contractor on profit percentage basis or salary. PW-8684, Engineering News-Record.

Sanitary Engineer, B.S.C.E., MSCE, Reg. P.E. 8 yrs. in supervision of design and construction of sewers, pumping stations, and sewage treatment plants. Desires responsible position with small to medium sized consulting firm. PW-8687, Engineering News-Record.

Position wanted as Project Manager or Superintendent. Have 25 years experience, and will qualify for the job, sober, honest and available now. Road highways and airports preferred. PW-8696, Engineering News-Record.

Construction Executive—42—Registered C.E. Extensive experience in heavy construction—job management—estimating—business operation—now employed as General Sup't. medium sized contractor—desires change with opportunity for advancement. PW-8703, Engineering News-Record.

General Manager—Medium size building construction firm. Seeks position leading to participation in ownership. Successful record. Graduate engineer. Middle thirties. PW-8704, Engineering News-Record.

• SELLING OPPORTUNITY WANTED

Man with 30 years experience as estimator and superintendent and once owned and operated own contracting business doing commercial buildings, schools and water filtration plants wants to represent out-of-state contractor doing business or desiring to do business in Alabama and adjoining states. Have also had considerable experience in government construction. RA-8551, Engineering News-Record.

CHIEF CIVIL ENGINEER

Broad experience in coordinating, directing & managing large scale diversified projects. Successful record of client negotiation and liaison.

Experience in or working knowledge of the following fields—Sewage and Water Treatment Plants, Water Supply and Distribution Facilities, Industrial Waste Treatment, Dams, Highways and Flood Control, Site Planning and Development.

This position with an old established New England Consulting Firm provides challenging opportunity for Registered Professional Engineer seeking long term association.

Strict confidence maintained
All replies acknowledged

P-8682, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

CONSTRUCTION COST ESTIMATOR

The Commonwealth of Pennsylvania offers a permanent position to a construction cost estimator with a Civil Engineering degree and at least one year of experience in highway construction cost estimating. Salary from $6,000 to $7,000, plus liberal fringe benefits. Send complete resume to

PERSONNEL
PA. HWYS. DEPT. — HARRISBURG, PA.

ENGINEERS

PERMANENT OPENINGS FOR QUALIFIED MEN EXPERIENCED IN THE DESIGN OF

BRIDGES
BUILDINGS
HIGHWAYS
AIRPORTS

PREFER GRADUATE REGISTERED ENGINEERS WHO SEEK LONG RANGE EMPLOYMENT WITH AMPLE OPPORTUNITY FOR PROFESSIONAL DEVELOPMENT AND ADVANCEMENT IN A STEADILY EXPANDING AND GROWING ORGANIZATION.

Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross. Moving allowance.

Work will be in the general offices in St. Louis. Interviews can be arranged in Washington, D. C., and San Francisco also.

Please write fully, including salary data, to

SVERDRUP & PARCEL, Inc.
ENGINEERS — ARCHITECTS
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GRADUATE CIVIL or ARCHITECTURAL ENGINEERS

We are looking for a young, recent college graduate, with a degree in either architectural or civil engineering, for a position in our El Paso, Texas—Estimating Department. This position provides a training ground for our future superintendents and executives. It is an excellent opportunity for a young man to obtain a desirable position with a reliable firm doing all types of construction work.

ROBERT E. McKEE

GENERAL CONTRACTOR, INC.
PO BOX 562 — EL PASO, TEXAS

DRAFTSMEN

For detailing of Reinforcing Steel, Steel Joists, Windows, etc. Experienced men only in this or Allied Fields considered. Permanent positions, Air-Conditioned Office, 40-hour week, overtime, hospitalization, group insurance and retirement plans, paid vacation. Location: Birmingham, Alabama. Reply giving brief resume of experience, education, availability and salary requirements.
P-8529, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

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CLASSIFIED ADVERTISING

BUSINESS OPPORTUNITIES - EQUIPMENT - USED or RESALE

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EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

UNDISPLAYED RATES

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BOX NUMBERS count as one additional line in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

• SPECIAL SERVICE

Have boards—will detail. Young reg. engineers will detail structural steel & reinf. Prompt, accurate service. Midwest loc. SS-8655, Engineering News-Record.

• BUSINESS OPPORTUNITIES

Exclusive Franchise Offered To Professional Engineer Proven money-making home inspection consulting service in competitive New York-New Jersey area, has received tremendous national publicity. New York Engineering firm founder now offers franchises in other metropolitan-suburban areas. Professional, graduate engineering background required. Little capital needed. Tell previous experience in first letter. Strictest confidence. BO-8656, Engineering News-Record.

Partnership available to man presently producing business in architect-engineering field. No cash needed. Firm located in Minneapolis. BO-8698, Engineering News-Record.

Have Excellent Proposition for small general contractor interested in operating in Florida —Heavy Construction—This is a good sound opportunity. BO-8702, Engineering News-Record.

• FOR RENT

51 Broadway—6,600 square feet, sublease Executive offices and staff areas. Immediate occupancy and attractive terms. Telephone W. S. Brayshaw of occupying firm. BEekman 3-6300 in New York.

CONTRACT SURVEY WORK

Experienced survey crews and field engineers available for survey projects large or small on per diem or contract basis.

Preliminary Surveys
Design Surveys
Construction Surveys
RICHARD H. MICK INC.
P. O. Box 134 Angola, Ind. Phone 901

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ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-eighth year.
Write today, without obligation
WILSON Engineering Corp.
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WANTED
TOURNACRANE
HEAVY DUTY UNIT
WITH TWO WHEEL TRACTOR
W-8680, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

FOR SALE
1—33' CONTRACTOR'S
FIELD OFFICE TRAILER
Excellent Condition
Located in Farmingdale, L. I.
DeLILLO CONSTRUCTION CO., INC.
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OVerbrook 1-1400

Engineers—Foremen—Office Men
Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.
GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
Satsuma, Florida

FOR SALE OR RENT
New 4500 Manitowoc Dragline 140' Boom
Long cats—wide pads—located factory—current serial number
10 Euclid Bottom Dumps, 13 cy ready to work, good rubber
New Northwest 80D Special 50 ton erection Crane/Clam shell/dragline/80' Boom, all special attachments
2 Euclid Water Wagons, 5000 gal. cap.
5 Tractors with Cat. Model 80 Scrapers
2 #12 Cat Graders
2 Fuel Trucks & (2) Grease Trucks
1 HD20G 4 cy. front end loader.
A. L. DOUGHERTY CO.
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Chicago, Ill. Essex 5-7676
Hammond, Ind. Westmore 1-9673

SURVEYING INSTRUMENTS
USED • REBUILT • SALE
RENT • REPAIRING

TRANSITS AND LEVELS

New or Rebuilt
Sale or Rent
Headquarters for REPAIRS — any make — Factory Service. We will also buy your old instruments or take them in trade.
A complete line of Engineering Instruments and equipment for field or office. Write for catalog NLR 88.
WARREN-KNIGHT CO.
Manufacturers of Transits and Levels
136 No. 12th St., Philadelphia 7, Penna.

ALL MAKES
RE-BUILT REPAIRS RENT REAL EXPERTS
BUFF

69 Day St., New York WOrth 2-2797

TRANSITS & LEVELS
Various Makes
NEW & REBUILT
Fully equipped modern shops — all makes and models repaired — all work guaranteed — prompt service — complete line field supplies.
INSTRUMENTS RENTED
Midwest Representatives: W. & L. E. Gurley, Distributors—Filotenica Salmoiraghi
NATIONAL BLUE PRINT CO.
Established 1913
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ALLIS CHALMERS HD20 TRACTORS
8—Year 1952 equipped with Push Blocks. In addition 3 are equipped with Carco Winches. Exceptional Bargains. Immediately available. Will sell in one lot or individually. Located at Massena, N. Y. Subject to prior sale or disposition.
L. B. SMITH, INC.
357 W. Fayette St. Syracuse 2, N. Y.
Phone GRanite 5-2196

FORSYTHE EQUIPMENT CO., INC.
MANITOWOC SPEEDCRANES
RENTALS
Capacities to 70 Tons
Booms to 140 ft. and 30 ft. jibs
Special rates on long rentals
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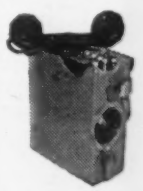
Long Island City 1, New York


U. S. Army Telephones EE-8 fully reconditioned. Suitable for intercommunication between 2 or more points. $35.00 for 2 telephones, including 100 ft. of wire and batteries. Additional wire 1¢ per ft. or $25.00 per mile. Write for free list on telephones. ALL shipments F.O.B. Simpson, Pa.
TELEPHONE ENGINEERING CO.
Dept. ENR 118 Simpson, Pa.

FOR SALE
Euclid Loader Model BV-3 S/N-18 powered by Cummins HBID 150 H.P. diesel engine. 54" belt. New 1949 used approx. 1000 hours. May be seen at Council Bluffs, Iowa.
MAKE OFFER
FOLEY BROTHERS, INC.
900 New York Building, St. Paul, Minnesota

FOR RENT
MANITOWOC Model 3500 Crane
Powered by Cummins Diesel Engine 140' Boom, 30' Jib. Mounted on 18'-4" Crawlers w/ 38" treads. In Excellent Condition.
AVAILABLE IMMEDIATELY
ANDERSON EQUIPMENT COMPANY
P.O. Box 427, Bridgeville, Pa. (Pittsburgh area)
Phones: LEhigh 1-6020 or CAnal 1-5300

EQUIPMENT FOR SALE

650-B Bucyrus Erie Elec. Drag, 195', 16 yd.
15-W Bucyrus Erie Elec. Drag, 215', 13 yd.
631 Page Elec. Dragline, 200', 8 yd.
9-W Bucyrus Erie Elec. Drag, 200', 8 yd.
625 Page Diesel Drag, 150', 10 yd.
723 Page Diesel Drag, 130', 10 yd.
621-S Page Diesel Drag, 125', 7 yd.
200-W Bucyrus Erie Diesel Drag, 125', 6 yd.
7-W Bucyrus Erie Diesel Drag, 180', 5 yd.
5-W Bucyrus Erie Diesel Drag, 120', 6 yd.
2400 Lima Drag, 130', 5 yd.
4500 Manitowoc Drag, 120', 5 yd.
3900 Manitowoc Speedcrane, 100' boom
3500 & 3000 Manitowoc Crawler Cranes
111-M Marion Drag, 100', 4 yd.
1201 Lima Dragline, 85', 3 yd.
1001 Lima Dragline, 85', 2½ yd.
5480 Marion 18 yd. Elec. H. L. Shovel
170-Bucyrus Erie 6½ yd. Elec. Shovel
120-B Bucyrus Erie 4 yd. Elec. Shovel
1400 P&H 4 yd. Elec. Shovel
44-B Bucyrus Erie 2 yd. Shovel
Unit 1020 ¾ yd. Shovel
Large selection of smaller Shovels and Draglines available
Model T-750 Reich Truck Mounted Rotary and Down-the-hole drill
Lima Model "C" Roadpacker
Euclid Trucks—Models 86FD, 27FD, 5FD, 2FD, 63TD, 36TD, 31TD, 25FDT, 38FDT, 67FDT
Truck Cranes, Dozers, Scrapers, Front End Loaders, Drills, Buckets, Attachments and other misc. equipment available.

FRANK SWABB EQUIPMENT CO., INC.
313 Hazleton Nat'l. Bank Bldg.
Hazleton, Pa. GLadstone 5-3658

Need A "Lift"?

CRANES, INC.

RENTALS

Manitowoc 3900's — Crawlers 3500's

Latest Models
Long Booms and Jibs
TRUCK CRANES

Link Belt and Bay City. Cap. to 35 Tons. Booms to 150 ft. Hoists-Welders-Generators

Maspeth 78, N. Y. ST 4-1776

EUCLIDS

14—Model 63TD 22 Ton Rear Dumps
(1955 and 1956)

Walsh - Perini - Morrison
Kiewit - Utah Companies

(Long Sault Dam)
Box 106—Massena, N. Y.

BULLDOZER — CATERPILLAR D7 with #25 PCU, 7S blade & canopy top. This 1957 unit has been well maintained, is in good condition and priced reasonably.

ANDERSON EQUIPMENT COMPANY
Box 427, Bridgeville, Pa. (Pittsburgh area)
Phones: LEhigh 1-6020 or CAnal 1-5300

EUCLID SCRAPERS

FOR SALE—RENT or RENTAL PURCHASE

7—Model 8TDT-14SH six wheel 15½ cu. yd. Scrapers. Cummins 275 H.P. Engine, 10-speed transmissions, 24.00 x 25 tires. Excellent condition. Unusual values. Located near Chicago and Springfield, Ill. All subject to prior sale or disposition.

L. B. SMITH, INC.
357 W. Fayette St. Syracuse 2, N. Y.
Phone GRanite 5-2196

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TRACK ACCESSORIES
NEW and RELAYING

Combination-Lifting Crane-Dragline
NORTHWEST MODEL 6

Used Approximately 400 Hours

Clam/Drag comb. late Model 6 Northwest 1 1/2 cu. yd. 33" treads—14'8" crawlers, Murphy Diesel Power, 70' boom, independent boom hoist, Worm gear boom hoist, Fairlead, Rudomatic Tagline. Mast type gantry, pendant lines, etc. Guaranteed like new.

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RAILROAD Cross and Switch TIES

Promptly from adequate stocks
NEW and USED *(as available)*

GILLIS & COMPANY
134 Breckenridge Lane Louisville 7, Ky.

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FOR SALE OR RENT

MANITOWOC #3900 ERECTION CRANE. NEW 1954. 100' BOOM, 20' JIB. LONG AND WIDE TRACKS. CUMMINS 300 HP DIESEL AND TORQUE CONVERTER. CAPACITY 60 TONS. CONDITION EXCELLENT.

LINK-BELT K-595 CRANE. CATERPILLAR D-17000 DIESEL ENGINE. 120' BOOM, 30' JIB. LONG AND WIDE TRACKS. CAPACITY 60 TONS. EXCELLENT CONDITION.

ALSO OTHER CRANES, CONSTR. & RY. EQUIP.

WHISLER EQUIPMENT CO.
1905 Railway Exchange Bldg., St. Louis 1, Mo.

For Sale or Rent

200 TON GUY DERRICK

Complete with accessories, less hoist. Converts to 300 ton gin poles.

FS-8644, Engineering News-Record
1125 W. 6th St., Los Angeles 17, Calif.

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Surplus New & Used
FOR SALE

LOW COST INSTALLATION AND OPERATION

CABLEWAYS

IMMEDIATE SHIPMENT
ELECTRIC, STEAM OR DIESEL
CAPACITY 3 TO 20 TONS
SELL, RENT OR BUY

FOR DAMS, BRIDGES, BREAKWATERS, FILTRATION AND SEWERAGE PLANTS

FOR SPEED, ECONOMY, EFFICIENCY, FLOOD SAFETY, LABOR REDUCTION

AMBURSEN DAM CO. INC.
295 MADISON AVE NEW YORK

ALBERT PIPE SUPPLY CO., INC.

PILING • PIPE • CULVERTS • VALVES & FITTINGS

ASBESTOS CEMENT PIPE • ALUMINUM PIPE

103 VARICK AVE., BROOKLYN, N. Y. • HY 7-4900

MODEL 4500
MANITOWOC SPEEDCRANE
FOR SALE

Serial #4566, complete with 140' Boom (45' bottom steel, 38' top aluminum, 37' center aluminum), Caterpillar D386 Diesel engine, air controls, full revolving fairlead, 25'9" crawlers, 60" crawler treads, 5 KW Koehler light plant complete with lights, one 20' aluminum boom insert, air windshield wiper; including bucket.

Located in Florida.

Owner: **C. B. HOPPE**
Box 590, Palm Beach, Fla.
Phone: **Temple 2-2479**

CLOSE OUT! TANK TRAILERS!

— CHOOSE FROM 10 —

4,000 gal. capacity. Tandem axles. Ideal for road sprinkling, gas and fuel oil transportation.

MEMPHIS EQUIPMENT CO.
766 So. Third, Memphis, Tenn. • JA 5-7841
Allegheny Branch: Chambersburg, Pa. • CO 3-4194

SHOVEL—LIMA ¾ Yd. Model 34 "PAYMASTER". Cat. Diesel & standard shovel front. New in 1956. A very clean machine in A-1 condition thruout. Priced to sell.

ANDERSON EQUIPMENT COMPANY
Box 427, Bridgeville, Pa. (Pittsburgh area)
Phones: LEhigh 1-6020 or CAnal 1-5300

ASSOCIATED PIPE & FITTING CO.

PILING PIPE SHELLS MANDREL FITTINGS	K & M ASBESTOS CEMENT PIPE	CULVERTS CIRCLE ARCH SECTIONAL

P. O. BOX 67, CEDAR GROVE, N. J. • CE 9-4800

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VALVES and FITTINGS
All Sizes in Stock
NEW—USED
GREENPOINT PIPE SUPPLY CORP.
Bogart and Stagg Streets, Brooklyn, N. Y.

ANGLEDOZER—CATERPILLAR D8 with Cat. PCU & Angleblade, 2U Series in good running condition. Reasonable.

ANDERSON EQUIPMENT COMPANY
Box 427, Bridgeville, Pa. (Pittsburgh area)
Phones: LEhigh 1-6020 or CAnal 1-5300

FOR SALE or RENT
1—15 B Bucyrus-Erie Crane and Backhoe
2—22½ Ton & 30 Ton Lorain Truck Cranes
1—25 Ton Bay City Truck Crane
1—35 Ton Link-Belt Truck Crane
1—D17,000 Caterpillar Power Unit
1—25 Ton Ohio Diesel Locomotive Crane
B. M. WEISS COMPANY
Girard Trust Bldg. Philadelphia, Pa.

EUCLID REAR DUMPS

12—22 Ton Rear Dump Trucks, Models 8TD, 46TD and 63TD, immediately available. Cummins and GM Diesel Power. Ready to go to work. Unusual savings.

For Sale—Rent or Rental Purchase
Subject to prior sale or disposition.

L. B. SMITH, INC.
357 W. Fayette St. Syracuse 2, N. Y.
Phone GRanite 5-2196

CRANES FOR RENT

CRAWLERS Capacities to 60 tons Booms to 180 ft.
TRUCK CRANES Capacities to 35 tons Booms to 130 ft.

P and H. Lima and Manitowoc.
Top-Condition erection cranes

ROGER SHERMAN
CRANE SERVICE, INC.
East Hartford, Connecticut JAckson 8-4106

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Pcs.	Section	Location	Location
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225	MP-115	50 to 60 ft.	Chicago
150	MP-112	50 to 60 ft.	Chicago
84	MP-116	60 to 65 ft.	Kansas City
174	MP-101	34 to 35 ft.	Nebraska
114	MP-116	26 to 30 ft.	Colorado
175	MP-115	14 to 17 ft.	Arkansas

CONMACO, INC.
PHONE DRexel 1-3930
804 KANSAS AVE., KANSAS CITY, KANSAS

H & STEEL SHEET PILING

3700 PCS. BETH. SP6, A65' 50' 56' & 48' & 40'
264 PCS. MP112—40' & 60'
447 PCS. BETH.—AP3—25 & 30, 40 & 60 FT.
780 PCS. BETH.—DP2—31' 40' 50' & 64'
536 PCS. BETH. ZP32—25' 36' 48' 55' & 62'
1500 PCS. BP112—BP14—55'-60'
112 PCS. 8' 300 PCS. 15' Corrugated
PILING BOUGHT—SOLD—RENTED
STOCKS: N. Y.—BOSTON—BUFFALO
MONTREAL—BALTIMORE—JACKSONVILLE
VANCOUVER—NEW ORLEANS
DIESEL LOCOMOTIVES
8—Gen. Elec. 80, 65, 45 & 25 ton
4—Whitcomb 65 ton
5—Plymouth, 10, 20 & 35 ton
4—GANTRY WHIRLEY CRANES
25 R-Amer. 75' Gantry 165' Boom
20 R-Amer. 60' Gantry 139' Boom
R. C. STANHOPE, INC.
60 E. 42nd St. N. Y. 17, N. Y.
Telephone Mu 2-3075

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STEEL SHEET PILING
H-Bearing Pile - Pipe Pile - Rail Pile
From our regular stocks
L. B. FOSTER CO.
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use this section, as many contractors do, as a piling buying directory. It can save you time when you want to know, quickly, where to buy good new or used piling.

NEW, SURPLUS
STEEL SHEET PILING

HY DRACHMAN STEEL CORP.

STRUCTURAL STEEL

The Contractors Steel Supply House
52-25 2nd St., Long Island City, N. Y.
RAvenswood 9-1262

STEEL IS OUR BUSINESS

STEEL SHEET PILING

LARSSEN and ROMBAS Sections

STOCKS AVAILABLE IN:
- Linden, New Jersey
- Ft. Lauderdale, Florida
- Houston, Texas

WESTERN SERVICES CORPORATION
601 E. Linden Ave., Linden, N. J.
MArket 4-4000 HUnter 6-4000

In Florida Call: Port Everglades Steel Co. Ft. Lauderdale—JA. 4-6545
In Houston Call: G. Oliver—CA. 4-7234

COMPLETE PILE DRIVING RIGS

Crane, Leads, Strut, #1 Hammer and Skid mounted Boiler—all for as low as $28,000.—This rig is fitted out ready to go to work for you.

Call today—Vinewood 2-3384
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Apples and Oranges

SOVIET PREMIER KHRUSHCHEV'S SPEECH at the dedication of Kuibyshev Dam and powerhouse last week points up anew the folly of comparing apples and oranges.

Russia's Premier could not let pass the opportunity to make an odious U.S.-Russian comparison. He noted that the 2.1 million kw Kuibyshev project was built in seven years while Grand Coulee's 1.97 million kw took 20 years to install. But, first of all, the dams aren't comparable in size and shape: Grand Coulee is among the highest, and indisputedly, the world's largest concrete gravity dam; Kuibyshev would compare more accurately with the lower Columbia River dams such as Bonneville. Secondly, Grand Coulee was built in five years, not 20; the other 15 years were used in adding units to the original powerhouse, plus a second powerhouse.

Amusement at Mr. Khrushchev's faulty comparisons, however, should not blind us to the fact that we sometimes try to compare apples and oranges, too. For example, it has been said that the U.S. should increase its water resources expenditures to prevent the Russians from catching up with us. Actually, water resource development in the two countries can't be compared directly—as might missile development, armies or navies. How and at what rate the rivers of each need to be developed depend on the needs of each country's economy, its direction, its stage of growth and the availability of other sources of power.

In the latter connection it should be noted that Mr. Khrushchev, after extolling the Kuibyshev Dam, called for a halt in construction of large Russian hydro projects in favor of faster-to-complete steam power stations. Should we now ape Mr. Khrushchev in his apparent turnabout? The answer is that we should not be overly concerned with what Russia does with its rivers, but continue to develop ours according to our needs. We can safely leave the apples and oranges comparisons to Mr. Khrushchev.

Consulting's Opportunity

WHAT MAKES SUCCESS for a large consulting firm? There were answers to this question in our recent story on Chas. T. Main, Inc., currently among the largest of consultants serving the construction industry (ENR Aug. 7, p. 66). Among the answers: thorough engineering knowledge of the client's problem, continued good service, ability to diversify, interest in both public and private projects, willingness to work abroad, eagerness to tackle difficult problems, flexibility of organization and operation.

Other ingredients go to create success for a consulting firm, of course. Talent is a must; genius helps. But the one particular attribute that must have added measurably to Chas. T. Main's success is a conviction that the task of the consultant has come to mean complete handling—short of contracting, of course—of the client's project. Design plus construction management is what this big firm has to offer. This is spelled out explicitly in the firm's brochure, which says, "Chas. T. Main, Inc., is an integrated engineering and construction management organization. . ."

Not every consultant concerned with construction, of course, must be an expert on management of construction projects. Nor must every consulting firm be large. There will always be a call for individual experts on particular phases of given projects, and such consultants need not have large staffs. But the firm that would become great—whatever its size—must think bigger than design. Just last month (ENR July 17, p. 26) Consulting Architect Vincent G. Kling told the American Institute of Architects: "It is not enough to be experts in design and techniques. We must have at our ready disposal expert knowledge and skills in law, taxation, finance, real estate, land planning and economics. And we must demonstrate capacity—not merely enthusiasm—to handle large and complex problems."

Therein lies the key to the future for consulting engineers as well as architects. Chas. T. Main's success (and many other successful firms could be cited) should leave no doubt of it.

Fight Against Blight

COMMUNITIES ACROSS THE NATION can profit from the housing report recently released by a New York State study group. The group's recommendations were conceived as major weapons in the fight against blighted residential areas and slums, and include a model housing code, designed for adoption by cities, towns and villages in the state, and an accompanying administrative guide for code enforcement (ENR Aug. 7, p. 25).

Poor housing conditions can be combatted in several ways. Slums can be demolished; new structures can be put up; or existing housing can be protected and conserved. A lack of codes, however, has long hampered the effectiveness of these methods. Failure to enforce minimum standards for both new and existing living quarters has been one of the major causes of deteriorating neighborhoods.

Among the recommendations for code enforcement dealt with in detail in the report are: the establishment of a planning agency to determine areas requiring redevelopment; a system of inspection to assure minimum standards and to correct violations; hiring of top-level enforcement personnel; sharing of personnel by small towns; and encouragement of citizen understanding.

The New York State report establishes a precedent worthy of notice by other states. Neighborhood blight is a continuing problem, and one of the best ways to fight it is through building code enforcement.

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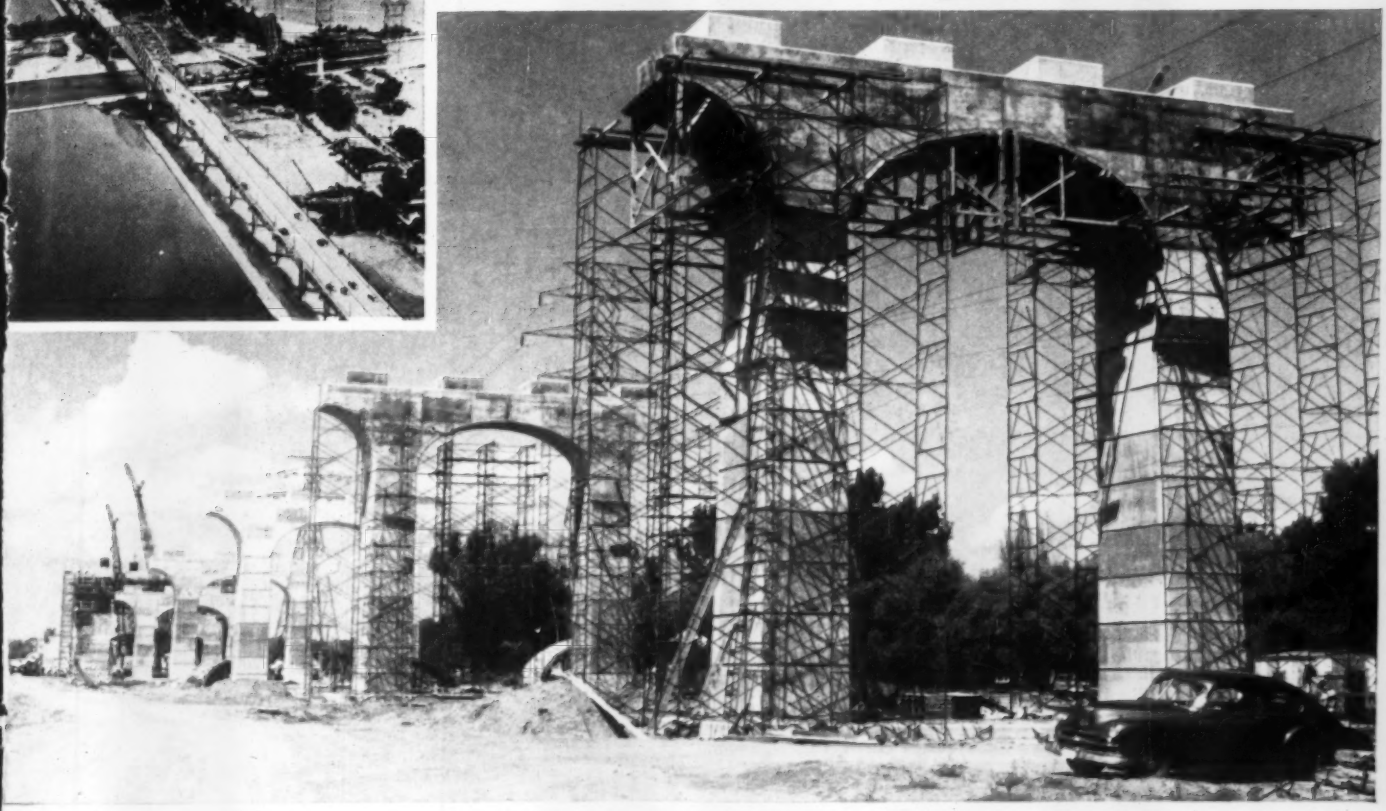

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